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Hepatitis B virus (HBV) is a major world wide cause of acute and chronic hepatitis, cirrhosis and hepatocellular carcinoma. There are more than 300 million carriers of the virus globally, and about 90% live in underdeveloped countries. Seventy-five percent of these are from Asian continent, where almost 8% to 15% of the population is carrier.

Majority of the infections are subclinical, so that approximately 80% of all HBV afflictions remain undiagnosed. On top of it the medical histories for identifying the risks and exposure remain unreliable. Regardless of the medical histories, therefore, the staff working in health care delivery systems should be regarded as potential carriers. Health care workers who have an increased exposure to blood are at an increased risk of getting blood borne infections. The level of risk depends on the number of patients with that infection in the health care facility and the precautions the health care workers observe while dealing with these patients. For example dentists are three to four times, and non immunized surgical specialists about six times more prone to catch the HBV than the general population. The situation is even worse for nurses and paramedical staff. The highest prevalence is seen in non professional staff. Various studies show a prevalence of 1.7% to 7.7% of Hepatitis B Surface Antigen (HBsAg) among health care workers. Ward boys and sweepers have a prevalence of 18.5% to 20.9% HBsAg positivity rate followed by staff nurses (19.2%), lab workers (5.6%) and doctors (3.1%). When scrutinized on history of exposure to risks of HBV infection, health care workers show past exposure of about 39.8% in the form of positive Anti HBe and 26.4% show immunity against the HBV by virtue of being anti-HBs positive.

Introduction of vaccine in 1981 made it theoretically possible to control the HBV infection. The vaccine is given in three separate intramuscular injections. The recombinant DNA yeast derived vaccine has superseded the older plasma derived vaccine. More than 95% young, healthy adults seroconvert and develop enough antibody titer for protection. Antibody titer needs to be checked two to four months after the vaccination is complete. Poor responders and non responders should have a booster dose or possibly a repeat course of vaccine.

Despite the availability of a safe and effective vaccine for HBV, the vaccination status in one study revealed that only 49% of health care workers and 42.2% of medical students were vaccinated. A total of 81.5% consultants got themselves vaccinated followed by 74.3% house officers and only 63.6% medical officers who were probably most involved with the patients. Regarding the post-vaccination status 87.5% consultants, 7.1% medical officers and none i.e. 0% house officers had their post vaccine antibody titer checked. The main reason for non vaccination among health care workers (47.7%) was the high cost of vaccination, while the most common cited reason (33.7%) among medical students was the belief that they were not at risk. This belief was also prevalent among nurses (36.4%), laboratory workers (38.6%) and paramedics (33.2%).

The article by Dr. Anjum Razzaq et al reported that almost 90% of health care providers from different groups of primary health care were aware of the disease and knew about the availability of vaccine. Despite this only 54.3% got vaccinated and out of these 89.2% got the whole three doses. Majority had no reasons for not being vaccinated, some of them lacked the knowledge and few had a strong belief to contrary. This situation is quite alarming.

Hence the target of 100% coverage with vaccination has yet not been achieved. This situation results in perpetuation of disease in the community. Efforts should be made to impart appropriate health education regarding hepatitis B infection. Awareness through health education and need to ensure better training and regulations regarding preventive and safety measures also need to be enforced. Regular educational campaigns for health care workers are needed to increase vaccination compliance. It is the need of the hour to emphasize on practicing universal precautions. In addition, in a low-income country like Pakistan the health institutions should bear the cost for vaccinating their staff and measures should be taken to bring down the cost of vaccination.
References


The Need and Relevance of Medical Autopsy

Arif Rasheed Malik and Kheyal Azam Khalil

Introduction
“A man of genius makes no mistakes; his errors are volitional and are the portals of discovery.” - James Joyce

The concept and scope of healthcare in this part of the world is thought to terminate with the life of the patient. In case doctors fail to establish the cause of death during the life of that patient, the quest is abandoned as soon as the patient is lost. The doctors as scientists must enquire into such a 'mystery' and solve it to avoid encountering it again. As it is well known that those who do not learn from history are condemned to it, we, despite the acknowledged role of medical autopsies in the prevention of medical errors do not carry out any. This is a rather irresponsible attitude as not attempting to learn from what was and had been; it wouldn't be inaccurate to say that we deliberately ensure the repetition of our mistakes costing no less than somebody's life.

Medical or hospital or clinical autopsy, a surgical procedure performed on a recently deceased patient, is the last and most complete diagnostic procedure. Carefully performed by a thoughtful, interested and experienced individual, it should reveal much of the truth about the health of the deceased patient and the mechanism of death.1

Autopsies that are commonly carried out here are medico-legal or forensic autopsies performed with the aim of providing answers to questions about the identity, cause of death, time of death, circumstances of death etc. thus helping the law enforcing agencies to solve a crime.2 These autopsies are hence performed when there is suspicion of a criminal activity while medical autopsies are usually carried out in case of hospital deaths with the consent of the relatives. Medical autopsy is rarely performed and the only example of this can be found at army institutes, that too of high profile cases. Those pathologists who carry out medical autopsies are capable and motivated to figure out exactly what caused the death of an undiagnosed patient or a patient for whom a treatment for an established diagnosis failed resulting in his/her death. As the part of this procedure, there is a systematic analysis of the body of the patient especially the organ systems. The external scrutiny of body and examination of clothes, in this case, is of lesser significance as foul play is not suspected.

Further examination may require a team of professionals who can carry out the histological and biochemical examinations. The medical records registering the course of treatment undertaken and the complete medical history of the patient is very important (as is generally known) to reach a verdict about the exact medical cause of death. This knowledge can be used to educate practicing physicians, students and even help the family of the patient to come to terms with the event of death.

Different beliefs among health professionals and people in general create a certain hesitation to performing a medical autopsy. Some believe that due to advanced diagnostic medical procedures there is little room for error and autopsy is unlikely to reveal anything other than that which is already known.3 Also hesitation may result from defensiveness of doctors apprehending blame for diagnostic complications.4

Medical autopsy, however, remains the most comprehensive and final method 'when one sees for oneself' in case a death has occurred especially considering everything that was done was by the book. After all, we must not forget in our complacency that a new disease might have appeared to endanger us all.

So, the role of medical autopsy is well acknowledged and established in the world generally and we unfortunately have failed to adopt it. Medical autopsies are important in clinical medicine as they can identify medical error and assist continuous improvement5 for example a study that focused on myocardial infarction (heart attack) as a cause of death found significant errors of omission and commission,6 i.e. a sizeable number of cases ascribed to myocardial infarction (MIs) were not MIs and a significant number of non-MIs were actually MIs.

Brief review of literature
The following quoted incidences indicate the supportive evidence to the significance of medical autopsy and its paradoxical lack.
A systematic review of studies of the autopsy calculated that in about 25% of autopsies a major diagnostic error was revealed. In another contemporary US institution, 8.4% to 24.4% of autopsies detected major diagnostic errors establishing the well-founded apprehension on the low rate of autopsy performance.

At some hospitals abroad, the rate of autopsy used to be astonishingly high demonstrating the emphasis laid on the relationship between the quality of health care and the rate of autopsy. In Cuba for instance, a hospital having 520 beds, more than 15,000 admissions and about 1,100 deaths yearly claimed to have performed autopsy on more than 80 percent of the cases since its opening 24 years ago.

This is however considered historical.

Today, this is on a decline at other places as documented by diminishing autopsy rates. In US hospitals the autopsy rate was approximately 50 per cent before World War II, it reached about 60 per cent in the 1960s and then rapidly declined to its current level of about 5 to 10 percent.

It is noteworthy that despite the increased use of advanced imaging techniques (thought to have proved invaluable for diagnosis) the frequency of medical errors, diagnostic or therapeutic, has not changed significantly. According to a case study in 2003, of 53 autopsy series identified, 42 reported major errors (clinically missed diagnosis involving a primary cause of death) and 37 reported class I errors (those most likely to have affected patient outcome). The median error rate was 23.5% (range 4.1% - 49.8%) for major errors and 9.0% (0 - 20.7%) for class I errors.

At US hospitals, studies have shown similar findings suggesting that major clinical diagnosis can be wrong. Beginning in the 1970s, 21% to 43% of autopsies discovered at least 1 clinically undetected error contributing to the patient's death, and 10% to 13% discovered a condition which if known before the patient's death, would likely have changed ongoing treatment.

One study found 55% major diagnostic errors (Class I and Class II) documenting their findings as: "Autopsies revealed 171 missed diagnoses, including 21 cancers, 12 strokes, 11 myocardial infarctions, 10 pulmonary emboli and 9 endocarditis, among others."

Focusing intubated patients, one study found "abdominal pathologic conditions, abscesses, bowel perforations or infarctions were as frequent as pulmonary emboli as a cause of class I errors. While patients with abdominal pathologic conditions generally complained of abdominal pain, results of examination of the abdomen were considered unremarkable in most patients, and the symptom was not pursued."

A large meta-analysis suggested that approximately one third of death certificates are incorrect and that half of the autopsies performed produced findings that were not suspected before the person died.

Also, it is thought that over one fifth of unexpected findings can only be diagnosed histologically, i.e. by biopsy or autopsy, and that approximately one quarter of unexpected findings, or 5% of all findings, are major and can similarly only be diagnosed from tissue.

Conclusion

These facts and figures reflect the existence of a considerable number of medical cases that should have been approached differently. Moreover, they portray possible medical errors and missed diagnosis at centers that are considered to be "first-world.

In other words, we have no data to speak of, that might in the least make us aware of how mistaken we have been in the past and hence shows little promise of being able to correct these mistakes.

Proposition: What should we do?

Therefore, it is suggested in good faith, keeping in view the interest of the society that the practice of medical autopsies should be carried out in this part of the world at least in the teaching and tertiary medical institutes.

For a medical autopsy, as mentioned before, consent of the relatives is required in contrast to medico-legal autopsy that is carried out on unnatural deaths while the state is the custodian of the body instead of the relatives. This proceeding is done as per section 174 Criminal Procedure code under the law and is hence not a matter of choice. However as the relatives must make a choice with reference to allowing a clinical autopsy they need to be aware of the necessity of this procedure. For this purpose medical and legal fraternities should sit with religious scholars and representatives of the civil society to discuss and settle the modalities to address religious, social and financial constraints for the conduct of medical autopsies in our setup.

Recommendations in this regard should be forwarded to the relevant and concerned authorities so that they can take the necessary measures.

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Awareness Regarding Viral Hepatitis B Amongst Health Care Providers At Primary Health Care Level And Their Tendency To Get Vaccinated Against Viral Hepatitis B In A Union Council Of District Lahore, Pakistan

Anjum Razzaq, Abdur Rashid Ch. and Zafar Niaz

**Objectives:** To determine the extent of awareness regarding viral hepatitis B amongst health care providers at primary health care level and their tendency to get vaccinated against viral Hepatitis B in a union council of District Lahore, Pakistan.

**Material & Methods:** A cross sectional study conducted on all health care providers of UC 120, District Lahore providing primary health care, using a pre designed questionnaire and data analyzed by Epi Info.

**Results:** All 256 HCPs were interviewed who belonged to various categories recognizable at primary health care level starting from doctors to quacks and spiritual healers. 26 (10.1%) HCPs were either unaware of the risk they had from viral hepatitis or did not know about the availability of any vaccination. 139 (54.3%) got vaccinated and out of them 124 (89.2%) got 3 doses or more, with 70 (50.4%) receiving it between 1 to 4 years ago. Out of 117 (45.7%) who failed to get vaccinated, 26 (22.2%) lacked knowledge and 38 (32.5%) had no obvious reason to avoid vaccination, only being “lazy”. 51 (43.6%) had a strong belief contrary to present medical knowledge to avert vaccination and 2 (1.7%) could not afford to get the vaccine. Only 1 HCP got her Anti HBs titers done and even that abroad. Dentists were a community fully vaccinated while spiritual healers and hakims were as a whole unvaccinated.

**Conclusions:** There is reasonable awareness regarding viral hepatitis (90%) amongst health care providers, yet demanding more effort on part of government regarding health education targeting health care providers. The vaccination status against Hepatitis B is comparable to that in tertiary care hospitals and again demands legislative and authoritative intervention on part of the government to get health personnel vaccinated.

**Key Words:** Viral Hepatitis, Hepatitis B vaccination, Awareness, HCPs.

**Introduction**

Hepatitis B virus is a DNA virus responsible for destruction of liver tissue ultimately leading to cirrhosis of liver. The damage in terms of health and cost of management of complications associated with cirrhosis of liver is tremendous and when it adds up to the meager and unplanned resources of a third world country like Pakistan not able to spend more than 0.57% of its GDP on health, the reality is even more unpleasant.

The routes of transmission of Hepatitis B make health care providers exceptionally susceptible to its spread and ultimately the source of this infection. Although there is general awareness about hepatitis amongst health care providers, it is still not able to persuade many to get vaccinated. Very few medical setups in Pakistan make it an obligation for their staff to get vaccinated for Hepatitis B. Multiple studies conducted in tertiary care hospitals of the country point out towards partial acceptance of the idea of getting vaccinated despite availability of free vaccine. A few studies also point out a similar trend amongst the medical students. Many of these studies also point out the fact that a significant number of those health care providers who opt for vaccination do not complete the course and even if they do, they do not bother to get their anti HBs titers done to validate their immune response.

Keeping in mind the above scenario, a public health physician may not be very optimistic about discovering any better results among health care providers at primary health care level. However this segment of health care providers need to be looked into and supported for a healthier trend with the expectation that this will lead to early and better
acceptance of preventive measures among general public, preparing us for a possible polio eradication like strategy for Hepatitis B also in near future.

**Material & Methods**

A cross sectional study was conducted on all health care providers of UC 120, District Lahore providing primary health care, using a pre designed questionnaire over a two month period between March and May 2007.

A total of 256 health care providers were located and interviewed. The categories interviewed included doctors, dentists, LHV's, LHW's, Dais, dispensers, homeopaths, hakims, spiritual healers, unqualified persons providing health care and miscellaneous staff pertaining to preventive services (vaccinator, CDC, medical technician & sanitary inspector).

The data was processed with the help of Epi Info version 3.4.

**Results**

Out of the 256 HCPs enrolled in the study 87 (33.9%) were practicing in the rural area, 17 (6.7%) in the para urban slums and 152 (59.4%) in the urban area. 151 (58.98%) resided within the studied Union Council. Only 29 (11.3%) were employed in the public sector and 9 (3.5%) in voluntary (welfare) sector; the remaining 218 (85.2%) were either self employed or employed by the private sector. 11 different categories of HCPs were identified in the area, namely 93 doctors (36.3%), 20 dentists (7.8%), 4 preventive public health staff (1.6%), 40 homeopaths (15.6%), 15 hakims (5.9%), 14 dispensers (5.5%), 7 LHVs (2.7%), 8 LHWs (3.1%), 14 dais (5.5%), 3 spiritual healers (1.2%) and 38 unqualified HCPs (14.8%). Nine (3.5%) worked in the Basic Health Unit, 7 (2.8%) at Rural Health dispensaries, 1 (0.4%) at a private hospital, 205 (80.1%) at their private setups (clinics), 9 (3.5%) at medical stores, 8 (3.1%) at dispensaries, 1 (0.4%) at a footpath (the traditional bone setter), 8 (3.1%) at their Health Houses and 8 (3.1%) paid home visits to see patients. 183 HCPs (71.5%) were males and 73 (28.5%) females. The age of these HCPs ranged between 17 to 68 years with a mean of 37.92 ± 10.51 years. The duration of service as a health care provider ranged between 1 month to 42 years with a mean of 12.98 ± 8.87 years. The duration of service in the present capacity ranged between 1 month to 42 years with a mean of 6.88 ± 7.87 years.

139 (54.3%) HCPs claimed that they were vaccinated against Hepatitis B. Out of these, 5 (3.6%) had received only one dose, 10 (7.2%) only 2 doses, 105 (75.5%) three doses, 16 (11.5%) three doses with 1 booster and 3 (2.2%) three doses with 2 boosters. 19 (13.7%) received the last dose less than a year ago, 70 (50.4%) between 1 to 4 years, 21 (15.1%) between 5 to 9 years and 29 (20.8%) 10 or more years ago.

**Fig 1** Percentage of HCPs vaccinated against Hepatitis B

Out of 117 HCPs (45.7%) who failed to get vaccinated, 6 (5.1%) thought that they were already immune to the disease secondary to the diet or certain herbs they were using, 45 (38.5%) did not like the idea of vaccination, 2 (1.7%) were too poor to get vaccinated, 26 (22.2%) were unaware of any such mode of prevention and 38 (32.5%) had no obvious reason despite awareness of its importance in their profession framed in a single word as "laziness". Only 1 HCP (0.4%) got her Anti HBs titers done and even and even that outside Pakistan.

Only 3 (37.5%) LHWs got vaccinated against Hepatitis B, with 2 receiving one dose only and one
receiving all three doses. The two with a single dose got that less than a year ago whereas the one who got 3 doses did get the last dose 1 to 4 years ago. 3 out of 5 who did not get vaccinated, never knew of the availability of any such “drug” whereas the other two had financial reasons to avoid it.

4 (57.15%) LHWs got vaccinated against Hepatitis B. 1 (25%) had just one dose less than a year ago, while the other 3 (75%) got 3 doses 1 to 4 years ago. 1 out of the 3 (33.33%) who did not get vaccinated did not like the idea of vaccination. The other 2 (66.67%) could only define “laziness” as a possible cause for not getting vaccinated.

Only 4 (28.6%) dispensers were vaccinated against Hepatitis B and none of the 4 government employees was vaccinated. Out of these 4, 1 (25%) received 2 doses, the last dose less than a year ago and the remaining 3 (75%) received 3 doses 1 to 4 years ago. The idea of vaccination did not appeal to 5 (50%) of those who did not get vaccinated, 1 (10%) admitted to lack of knowledge while another 4 (40%) attributed this to “laziness”.

Only 3 (21.43%) dais got vaccinated against Hepatitis B; 1 (33.33%) received 2 doses less than a year ago and the other 2 (66.67%) got 3 doses 5 to 9 years ago. Out of the 11 who did not get vaccinated, 1 (9.1%) did not find the idea very appealing, 9 (81.8%) admitted to their lack of knowledge and 1 (9.1%) blamed “laziness” as the cause.

22 (55%) homeopaths were vaccinated against Hepatitis B. 1 (4.5%) got one dose only, 3 (13.7%) got two doses, 16 (72.8%) got 3 doses, 1 (4.5%) got 3 doses and a booster dose and 1 (4.5%) got 3 doses with 2 boosters. 5 (22.7%) got the last dose less than a year ago, 12 (54.5%) got it 1 to 4 years ago, 2 (9.1%) got it 5 to 9 years ago and 3 (13.7%) got it 10 or more years ago. Those who did not get vaccinated were 18 in number. 2 (11.1%) thought they were already immune against such diseases, 9 (50%) did not like the idea of vaccination, 4 (22.2%) admitted to their lack of knowledge and 3 (16.7%) gave credit to their “laziness”.

Only 6 (15.8%) of the unqualified HCPs were vaccinated against Hepatitis B. 2 (33.3%) received 2 doses while 4 (66.7%) claimed to have received all 3 doses. 2 (33.3%) had completed the course less than a year ago while the remaining 4 (66.7%) had done it 1 to 4 years ago. Out of 32 those who did not get vaccinated, 4 (12.5%) thought they were already immune or gave credit of their immunity to good diet, 11 (34.4%) did not find the idea of vaccination appealing, 8 (25.0%) admitted to their lack of knowledge and another 9 (28.1%) gave credit to their “laziness”.

All 20 (100%) dentists had got themselves vaccinated against Hepatitis B. 2 (10%) had got 2 doses while the remaining 18 (90%) had received all 3 doses. None got a booster dose. 14 (70%) got their last dose 1 to 4 years ago, 2 got it 5 to 9 years ago and 4 (20%) got it more than 10 years ago.

74 (79.6%) doctors were vaccinated against Hepatitis B. 1 (1.3%) got only 1 dose, 56 (75.7%) received 3 doses, 15 (20.3%) received 3 doses with 1 booster dose and 7 (9.5%) received the last dose less than a year ago, 30 (40.5%) got it 1 to 4 years ago, 15 (20.3%) got it 5 to 9 years ago and 22 (29.7%) got it more than 10 years ago.

Only 1 doctor had ever done Anti HBs titters and even that when she was employed abroad. All 19 doctors who were not vaccinated attributed this to their “laziness”.

Only 1 (6.7%) Hakim had got vaccinated against Hepatitis B and had got 2 doses 5 to 9 years ago. The remaining 14 (93.3%) did not like the idea of vaccination and had a strong reason based on their knowledge of Hikmat against it.

None of the spiritual healers was vaccinated against Hepatitis B. 1 (33.3%) was unaware of this mode of protection while other 2 (66.7%) did not like the idea. 2 (50%) of the preventive staff were vaccinated against Hepatitis B and both had received all 3 doses 1 to 4 years ago. The remaining 2 (50%) did not get vaccinated as they were not impressed by the idea of it.

Discussion

Only 26 out of 256 (10.1%) HCPs were unaware of the existence of viral hepatitis or did not know about Hepatitis B vaccination. It means there is reasonable degree of awareness amongst the HCPs regarding viral hepatitis, although it still demands extra attention to the health education of HCPs on part of public health authorities. Out of the 230 who were aware of Hepatitis B and its vaccination, only 139 (60.4%) bothered to get vaccinated. Out of 6 who thought they were already immune against Hepatitis B and therefore did not need the vaccination, 2 (33.3%) were homeopaths and the remaining 4 (66.7%) were unqualified HCPs. Out of 45 HCPs who did not like the idea of vaccination, 2 (4.4%) were employed in public sector as preventive workers (despite continuous medical refresher training), 9 (20%) were homeopaths, 14 (31.1%) were Hakim, 5 (11.1%) were dispensers, 1 (2.2%) LHW, 2 (4.4%) spiritual healers and 11 (24.4%) unqualified HCPs. The 2 HCPs unable to afford vaccination were LHWs
which makes one realize that the training schedule for all HCPs might provide the best opportunity to vaccinate all HCPs against Hepatitis B free of cost. The most striking part of the parameter is the element of “laziness” which perhaps does not highlight the actual intentional neglect or arrogance of part of the HCPs. Out of 38 “lazy” HCPs (14.8% of the total), 19 (50%) were doctors, followed by 9 unqualified HCPs, 4 dispensers, 3 Homeopaths, 2 LHIVs and 1 dai.

The category of HCPs which did not get vaccinated as a whole was that of spiritual healers; lack of medical knowledge on their part may explain their stand point. Hakeems were the next to follow, where 14 out of 15 (93.3%) were un vaccinated, the only Hakeem who got vaccinated was working as support staff in a teaching hospital in Lahore, where he received this vaccination free of cost. All Hakeems had strong Hikmat based reasons to deny vaccination. The category fully vaccinated against Hepatitis B was that of the dentists, who got 3 doses at the most. None of them opted for booster doses and none ever had his Anti HBs titers done. When all the studied categories were compared for vaccination status, statistically significant difference was noted (p = 0.00026).

The educational status of HCPs which ranged from illiteracy to post graduation when compared with vaccination against Hepatitis B generated statistically significant result (p < 0.05). In this study, 139 of all 256 HCPs studied (54.3%) got vaccinated and when compared to the data derived from the tertiary care hospitals of Lahore by Imam SF et al', the situation is not very discouraging. Imam et al' studied 802 HCPs in Lahore General Hospital where only 192 (23.95%) of the HCPs were vaccinated and even out of these, 107 (55.7%) only partially vaccinated. The partially vaccinated HCPs in our study were only 15 out of 139 (10.8%) (p < 0.05).

Another study by Nasir K et al' studied 206 HCPs in Allama Iqbal Medical College, Lahore and 327 medical students where only 49% of the HCPs were vaccinated compared to our 54.3% HCPs (p = 0.58).

Another study on 393 HCPs working in Agha Khan University Hospital, Karachi by Ali NS et al' showed that 86% of all HCPs were completely vaccinated compared to our study where only 124 out of 256 (48.4%) were completely vaccinated (p = 0.01). The last study probably highlights the multi national trend which differentiates Agha Khan University Hospital from other tertiary care setups of the country, a more methodical approach towards medical ethics, preventive practices, mandatory vaccination and access to free vaccination.

The presented data points towards the need for a meticulous study designed to find out the present status of Hepatitis B and C and HIV infections among HCPs and the status of effective vaccination against Hepatitis B confirmed through checking of Anti HBs titers.

Realizing that only 12 out of 29 (41.3%) HCPs in public sector were vaccinated against Hepatitis B, the expected outcome of other vaccination/ immunization programs does not seem to be very encouraging.

It is difficult to perceive that a professional who is not willing to get himself vaccinated will advise others to do so.

The same fact is highlighted by another parameter where only 4 out of 29 (13.8%) HCPs in public sector advised their patients to get screened for Hepatitis B and C as compared to the 149 out of 227 (56.8%) HCPs in private sector (p = 0.001).

**Conclusion**

There is reasonable awareness regarding viral hepatitis amongst health care providers, yet demanding more effort on part of government regarding health education targeting health care providers.

The vaccination status against Hepatitis B is comparable to that in tertiary care hospitals and again demands legislative and authoritative intervention on part of the government to get health personnel fully vaccinated.
References


Original Article

Treatment of Interto-chanoanteric Fractures in Adults with Dynamic Hip Screws without Radiological Control - an Operational Dilemma

Ali Raza Hashmi, Rana Dilawariz Nadeem and Khalid Tanveer Ahmed

Objective: The objective was to assess the early (immediate post-operative) and final outcome of fracture union, mal-union, non-union, avascular necrosis, implant failure and infection.

Material & Methods: A prospective study of fifty five patients of intertrochanteric fractures treated with dynamic hip screws (DHS) without radiological control (C-arm and X-rays) was conducted at Orthopaedic Department, Services Hospital Lahore. AO classification of intertrochanteric fractures was used and fractures were classified as A1, A2 and A3 fractures.

Results: There were 20 (40%) A1, 25 (50%) A2 and 5 (10%) A3 fractures. All fractures were reduced and fixed with DHS. 19 patients (38%) had ideally placed implants, 18 patients (36%) had less ideally placed implants and 13 patients (26%) had implants in non-ideal (unsatisfactory) position that required immediate re-do surgery. Overall complication rate was 88% in A2 fractures and 80% in A3 fractures.

Conclusion: DHS osteosynthesis in intertrochanteric fractures without radiological control should be discouraged. It is always better to refer the cases where radiological facilities are available in order to avoid morbidity, increased hospital stay and financial burden on the already financially constrained individuals.

Key Words: Interto-chanoanteric fracture, Hip surgery, DHS.

Introduction

Fractures around the hip are escalating due to improved survival rate in the osteoporotic elderly patients. Interto-chanoanteric fractures have been estimated to occur in over 20,000 patients each year in United States. In our population intertrochanteric and intra-capsular fractures contribute more than 80% of all fractures occurring in elderly people. Most of these fractures occur between 60-70 years of age and the frequency of occurrence of these fractures is three times higher in females as compared to the male patients. Reported mortality with intertrochanteric fractures ranges between 15-20 %; the high mortality is attributed to old age, greater blood loss and prolonged operating time as compared to the intra-capsular fractures. The aim of the fracture fixation is to provide stable fixation and early mobilization of the patients both within and outside the bed to avoid complications related to prolonged incubency. In our country even at tertiary care centers in government sector, radiological facilities are deficient; either these are not available or devices remain out of order and no back-up facilities are available. The purpose of the study was to determine the final outcome of DHS by open method in terms of placement of screw, union, non-union, infection, avascular necrosis (AVN) and walking ability of the patient.

Material and Methods

A prospective study of fifty patients with intertrochanteric fractures fixed with DHS without radiological control was carried out at Orthopaedic Department, Services Hospital, Lahore, from January 2005 to October 2005. There were 30 females and 20 male patients; age ranged from 62-80 years (average age 65 years).

Interto-chanoanteric fractures were classified according to AO classification:
1. A1 fractures along the trochanteric line
2. A2 fractures: multi-fragmentary peritrochanteric fractures
3. A3 fractures: simple transverse intertrochanteric fractures

In this study 20 (40%) were A1, and 25 (50%) were A2 and 05 (10%) were A3 fractures. Patients with co-morbidities such as diabetes, ischemic heart disease, renal failure and advanced Chronic Obstructive Pulmonary Disease (COPD), or unfit for general/ epidural anesthesia were excluded from the study. Patients were operated under general or epidural anesthesia in supine position with sand bag under the operated limb. Per-operative antibiotic Cefuroxime 1.5 gm at the time of induction followed
by 750 mg 8 hourly for 3 days was intravenously administered. Watson and Jones approach 2 was used with extension of incision proximally towards anterior superior iliac spine. Femur neck was exposed superiorly and inferiorly after incising the capsule in ‘T’ shaped fashion. Hoffmann’s retractors were placed on superior and inferior aspects of the whole of the neck to provide a better exposure to the anterior aspect of the neck. The fracture was reduced with the help of the traction applied by a third assistant. Guide wire was inserted 3 cm inferior to the flare of the greater trochanter into the postero-inferior part of the neck of femur through eyeballing and remaining procedure of DHS insertion was completed in steps. Suction drain was placed and wound was closed in layers. The surgical procedure lasted 70 minutes on an average in stable fractures (A1) and 90 minutes in unstable (A2 and A3) fractures. Patients were evaluated regarding placement of DHS, early and late complications like infections, cutout of DHS, loss of reduction, varus deformity, avascular necrosis and non-union. Placement of DHS is divided into three types:
- Type A: sliding screw in sub-articular bone within 5mm from the joint line and in the postero-medial part of the head
- Type B: screw placement between 5mm to 15mm from the joint
- Type C: screws either cutout, superiorly placed with various angulations or penetration into the joint with or without varus angulation

**Results**
Fifty patients were followed until the fractures united or a revision (redo) surgery was performed. The patients were divided into three groups depending upon the placement of screws, details of which are given in Table 1 and Fig 1, 2, 3.

**Table 1:** Comparison of placement of screws

<table>
<thead>
<tr>
<th>Fracture Type (Patients)</th>
<th>Ideal</th>
<th>Less Ideal</th>
<th>Non Ideal</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 (20)</td>
<td>09</td>
<td>06</td>
<td>05</td>
</tr>
<tr>
<td>A2 (25)</td>
<td>08</td>
<td>10</td>
<td>07</td>
</tr>
<tr>
<td>A3 (05)</td>
<td>02</td>
<td>02</td>
<td>01</td>
</tr>
<tr>
<td><strong>Total Patients %</strong></td>
<td>19 (38%)</td>
<td>18 (36%)</td>
<td>13 (26%)</td>
</tr>
</tbody>
</table>

Among the non-ideals, five patients had screws penetrating into the joint, seven patients had screw placement towards the upper pole of the neck, not maintaining the neck-shaft angle and one had a cut-out implant superiorly. The complications observed in the patients are mentioned in Table 2.

**Overall complication rate in A1 fractures was 25%, A2 fractures had highest 88% complication rate and A3 fractures had 80% complication rate. The reason for high complication rate in A2 and A3 was inherent instability of the fracture, increased operating time and prolonged exposure of the wound, osteoporosis and unstable fixation.**

**Table 2:** Complications in treatment of intertrochanteric fractures in adults with DHS without radiological control

<table>
<thead>
<tr>
<th>Complications</th>
<th>A1 Fractures (20 patients)</th>
<th>A2 Fractures (25 patients)</th>
<th>A3 Fractures (05 patients)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infections</td>
<td>05</td>
<td>07</td>
<td>01</td>
</tr>
<tr>
<td>Avascular necrosis</td>
<td>Nil</td>
<td>02</td>
<td>Nil</td>
</tr>
<tr>
<td>Non-Union</td>
<td>Nil</td>
<td>04</td>
<td>Nil</td>
</tr>
<tr>
<td>Varus deformity</td>
<td>Nil</td>
<td>03</td>
<td>02</td>
</tr>
<tr>
<td>Cut out of DHS</td>
<td>Nil</td>
<td>06</td>
<td>01</td>
</tr>
<tr>
<td><strong>Total Patients %</strong></td>
<td>05 (25%)</td>
<td>22 (88%)</td>
<td>04 (80%)</td>
</tr>
</tbody>
</table>
Figure 1: Type A

Figure 2: Type B

Figure 3: Type C

Mean hospital stay of patients was 10 days when no complication was observed; however, in patients undergoing redo surgery due to early complications e.g. non-ideal placement of the screw and infection, it was $30 \pm 0.05$ days.

After six months of follow up, 92% (46 patients) had a complete union and were able to walk with the help of walking aid.

Discussion

Higher rate of implant cutout, varus angulation and loss of reduction was noted in unstable intertrochanteric fractures (type A2 and A3). Increased infection rate was due to long operating time and excessive soft tissue dissection required for the proper exposure of the fracture and less ideal operating condition.

Results were worse with poor per-operative fracture reduction as one had to rely on eye balling.

Results also showed that pre-operative fracture classification is a strong and significant determinant of post-operative stability.

In our cases with stable inter-trochanteric fractures (A1), the position of screws was ideal in 19 (38%) of patients and 18 (36%) of the patients had less ideal placement of screw. Most of these patients developed union of fractures. Weight bearing was
delayed in patients with less ideal placement of screw as compared to those patients having ideal placement of screws.

Diamon Hughsten osteotomy was done in 03 patients with A2 fractures. Diamon Hughsten osteotomy and restoration medial cortex buttressing had definite advantages to provide the inherent stability as contrary to the studies done by Steinberg et al. Pitfalls occurred when DHS insertion was incorrect and fracture was not properly reduced. Problems related to fracture reduction were due to posterior sag, varus angulation and postero-medial communication.

05 patients of type A1 fractures developed superficial infections which were cured by change of antibiotic according to culture of swab taken from the wound discharge. 05 patients of type A2 fractures developed superficial infection and 02 patients developed deep infections which were again treated by antibiotics and daily dressings. One patient of type A3 fracture developed deep infection along with non-ideal placement of the screw that was treated with removal of implants, open drainage and antibiotics according to C/S and skin traction for six weeks. This patient had a fibrous union of the fracture site and it was painful on weight bearing. This was managed with ischial weight bearing brace and analgesics.

Potential pitfalls during DHS insertion included superior guide wire placement, guide wire breakage, loss of reduction during lag screw insertion, improper screw barrel relationship and inadequacy in determining the exact length of DHS screw. All these problems were faced due to lack of orthopedic table and C-arm facilities.

Conclusion
It is recommended that radiological control (C-arm and X-rays) is essential for the insertion of DHS in intertrochanteric fractures. DHS insertion without proper radiological facilities increases the risk of complications and hospital stay of the patients three to four folds.

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References
Frequency of Disorders Causing Childhood Thrombocytopenia

Aamer Naseer, Hamayun Iqbal Khan, Fauzia Tabassum, Amjad Hussain and Mohammad Ali Khan

Objective: To study the relative frequency of the disorders causing childhood thrombocytopenia.

Patients & Methods: This descriptive study was conducted in the Department of Hematology and Transfusion Medicine Division, the Children Hospital and the Institute of Child Health, Lahore and the Department of Pediatrics, Services Hospital Lahore. The duration of the study was 1 year from March 2005 to April 2006. Two hundred cases having platelet count less than 1, 50,000/mm³ were included in this study. Causes of thrombocytopenia were determined on the basis of history, physical examination and various investigations. The data were collected on a proforma and analyzed using SPSS for Windows version 8. The results were compared with other studies. Chi-Square test was applied to determine P-values.

Results: Acute lymphoblastic leukemia was found to be the commonest cause of childhood thrombocytopenia observed in 60 (30.0%) cases, followed by hypoplastic / aplastic anemia 40 (20%) cases, AML in 30 (15%), ITP in 28 (14%) cases and megaloblastic anemia in 20 (10%) cases. Drugs and infections together caused thrombocytopenia in a considerable number of patients. 96 children (48.0%) had platelet count in the range of 11-40 x 10⁹/L. Hemorrhagic manifestations were seen in 123 (61.5%) children. Epistaxis and purpura / bruises were the main presenting bleeding manifestations.

Conclusion: Thrombocytopenia is associated with different disorders and acute lymphoblastic leukemia was found to be the most common of childhood thrombocytopenia.

Key Words: Thrombocytopenia, ALL, ITP, low platelets, purpura

Introduction
Thrombocytopenia is a common cause of abnormal bleeding. It may be defined as a reduction in the platelet count below the lower normal limit of 150,000/µl. The normal range in health is approximately 150-400 x 10⁹/L, whereas values being about 250 x 10⁹/L. Platelet life span has been estimated to be 8-12 days in humans. The breakdown in the hemostatic integrity is a life threatening experience that requires an urgent diagnosis and immediate management because spontaneous bleeding is one of the most distressing events in children. Blood vessels, platelets and coagulation factors are three major components for normal hemostatic mechanism and they act in a coordinated fashion to arrest bleeding. Platelets have a critical role in hemostasis and the presence of adequate number of viable platelets is necessary for this function.

Hemorrhage is the most important clinical manifestation of thrombocytopenia and skin is the most common site of bleeding (petechiae, purpura and ecchymoses). There may be mucosal bleed like epistaxis and gum bleed. Rarely cerebral hemorrhage may occur in severe thrombocytopenia and it may invariably prove fatal. Serious spontaneous bleeding is usually a risk only in patients with platelet levels under 20 x 10⁹/L.

Thrombocytopenia occurs when the platelets are destroyed, sequestered in the body or not produced. Determining the true cause of thrombocytopenia is a difficult and challenging clinical problem. Thrombocytopenia may be benign, incidental finding in an asymptomatic patient or the sign of a potentially life threatening disorder. Therefore, a careful medical history, physical examination, complete blood count and peripheral smear can assist the physician to arrive at the diagnosis of thrombocytopenia.

A lot of work has been done regarding the etiological factors of thrombocytopenia in the West. Different etiological factors have been implicated in the causation of thrombocytopenia in various populations of the world. Since the treatment of thrombocytopenia is determined by the underlying mechanism, it is imperative to have a clear understanding of the etiology and pathophysiology
of thrombocytopenia. Therefore, the aim of this study was to find out the common causes of thrombocytopenia in our community.

**Material and Methods**

It was a descriptive study which was conducted in the Department of Hematology and Transfusion Medicine Division, Children Hospital and the Institute of Child Health, Lahore and Department of Pediatrics, Services Hospital, Lahore. 200 consecutive patients who had thrombocytopenia and who presented with different diseases in these departments were selected for this study. Inclusion criteria included children between 1 and 12 years of age and patients having platelet count below 150×10^3/L. Exclusion criteria included children below 1 year, greater than 12 years and patients who were taking immunosuppressive drugs and ionizing radiations. Detailed clinical history, including drug history, history of cytotoxic therapy, risk factors such as infections and family history of bleeding disorders and complete physical examination especially skin and mucous membranes for the evidence of purpura, bruises, nose bleeding and gum bleeding, lymph nodes, spleen and liver were carried out and recorded on a proforma. Later on investigations were carried out and results of all the investigations were also noted on the proforma. Investigations were based upon the clinical and hematological indications. These included bone marrow aspiration stained by Leishman's stain and special stains, where indicated bone marrow biopsy processed by paraffin embedding technique and stained by hematoxylin and eosin, reticulin stain, coagulation tests (PT, APTT), reticulocyte count, direct antiglobulin test, fibrinogen level, fibrin degradation products, liver function tests, renal function tests, blood cultures and other serological procedures, viral serology, x-rays and/or abdominal ultrasound.

Results were reported as frequencies and percentages for the various etiologies of thrombocytopenia. The results of the study were compared with other local and international studies by calculating P-values through Chi-Square test.

**Results**

Two hundred cases were included in this study. Out of these 137 (68.5%) were males giving a male to female ratio of 2.1:1. Age of the patients ranged between 1-17 years. Maximum number of patients (37.5%) was seen between the age group of 2-5 years (Fig-1).

Among 60 cases of acute lymphoblastic leukemia (ALL), 48 (80%) were males (male to female ratio of 4:1). Their mean age was 6.03 SD +3.58 and median was 5.25 years. Maximum number of patients (50%) was in the age group of 2-5 years. Among 40 cases of hypoplastic / aplastic anaemia, there were 28 (70%) males with a male to female ratio of 2.3:1 (Fig-2). Their mean age was 9.63 SD +2.86 and median was 10.0 years. The children in the age group of 6-10 years were 62.5% (Table-2). Out of 30 cases of acute myeloid leukemia (AML), 22 (73.3%) were boys with a male to female ratio of 2.75:1 (Fig-2). Their mean age was 6.41 SD +3.9 and median was 5.0 years. However, only 4% of children were found to be in the age group of 11-17 years (Table-2). Among 28 cases of ITP, there were 12 (42.8%) males with a male to female ratio of 0.75:1. Their mean age was 5.22 SD +3.83 years. Maximum numbers of patients (50%) were in the age group of 2-5 years (Table-2).

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Disease</th>
<th>No. of Patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Acute Lymphoblastic Leukemia</td>
<td>60</td>
<td>30</td>
</tr>
<tr>
<td>2.</td>
<td>Acquired Hypoplastic / Aplastic Anaemia</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>Acute Myeloid Leukemia</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td>4.</td>
<td>Immune Thrombocytopenic Purpura</td>
<td>28</td>
<td>14</td>
</tr>
<tr>
<td>5.</td>
<td>Megaloblastic Anaemia</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>6.</td>
<td>Septicaemia</td>
<td>04</td>
<td>02</td>
</tr>
<tr>
<td>7.</td>
<td>Fanconi Anaemia</td>
<td>03</td>
<td>1.5</td>
</tr>
<tr>
<td>8.</td>
<td>Hypersplenism</td>
<td>03</td>
<td>1.5</td>
</tr>
<tr>
<td>9.</td>
<td>Megakaryocytic Hypoplasia</td>
<td>02</td>
<td>1.0</td>
</tr>
<tr>
<td>Sr. No</td>
<td>Cause of Disease</td>
<td>1</td>
<td>2-5</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------</td>
<td>---</td>
<td>------</td>
</tr>
<tr>
<td>1.</td>
<td>ALL</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>2.</td>
<td>Hypoplastic / Aplastic Anaemia</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>AML</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>4.</td>
<td>ITP</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>5.</td>
<td>Megaloblastic Anaemia</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>6.</td>
<td>Infections / Drugs</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

**Table -2: Distribution of thrombocytopenic children by cause and age groups**

**Fig-1: Distribution of patients by age group**

Out of two hundred thrombocytopenic children, 48% were having platelet count in the range of 10-40 x 10^9/L, whereas platelet count in the range of 101-150 x 10^9/L was seen only in 2% patients. Out of sixty cases of ALL, thirty two patients were having platelet count less than 50 x 10^9/L. Mean platelet count in ALL was 36.72 x 10^9/L, while two were having platelet count less than 10 x 10^9/L. Forty patients of hypoplastic / aplastic anaemia presented with thrombocytopenia and the mean platelet count was 30.35 x 10^9/L. Ten patients were having platelet count less than count 10 x 10^9/L. Thrombocytopenia was detected in 30 cases of AML and 40% of patients had platelet count between 11-40 x 10^9/L (mean platelet count of 34.97 x 10^9/L). Platelet count between 11-40 x 10^9/L were observed in fifteen cases of immune thrombocytopenic purpura and mean platelet count was 39.95 x 10^9/L. Twenty patients of megaloblastic anaemia presented with thrombocytopenia. Fourteen patients (70%) were having platelet count between 71-140 x 10^9/L (mean

**Fig-2: Distribution in children suffering from thrombocytopenia by diseases and sex**
platelet count was 68.85 x 10^9/L). The remaining 32 patients of various disorders had variable platelet counts.

**Discussion**

Thrombocytopenia may be the result of decreased platelet production, increase destruction of platelets, increase sequestration or combination of two or more of these mechanisms. All these three mechanisms are the result of different etiological factors that may be non-immune or immune mediated. The differential diagnosis of thrombocytopenia is extensive and complex and there is a significant overlap among disorders. However, a detailed history, comprehensive physical examination and laboratory criteria probably represent the most useful diagnostic method at present.

The present study was conducted in the Department of Hematology and Transfusion Medicine Division, Children Hospital and the Institute of Child Health, Lahore and Department of Pediatrics, Services Hospital Lahore, on a sample of 200 patients documented to have thrombocytopenia.

Out of these 200 children, 92 cases were diagnosed to have various types of leukemia; 90 cases were found to have acute leukemia, whereas 2 had chronic leukemia. The frequency of childhood leukemia in different studies is shown in Table-1. Acute lymphoblastic leukemia was diagnosed in 60 cases (30%) which was the most common disorder causing childhood thrombocytopenia. Among childhood leukemia, acute lymphoblastic leukemia was the most common (65.2%) as compared to acute myeloid leukemia (32.6%) with ALL to AML ratio of 2:1.

Among 60 cases of ALL, there were 48 males (80%). So male patients dominated females with an overall male to female ratio of 4:1. Male excess has been reported in most of the studies on childhood ALL. In a study held in Pakistan with a large sample conducted by Ifikhar and Kazi, reported male excess with male to female ratio of 4:1 which is comparable to this study.

Hypoplastic/aplastic anaemia is the second most common disorder causing childhood thrombocytopenia and 40 cases (20%) were diagnosed with male to female ratio of 2.3:1. Similar results were also reported by Adil at Agha Khan Hospital Karachi; however, in England Muir reported male to female ratio of 1.04:1. So our results are comparable with local and international studies. The mean age of children with hypoplastic/aplastic anaemia was 9.63±2.86 (SD) which is comparable with 10.3 years as reported by Chuansumrit in Thailand.

Acute myeloid leukemia was the second commonest childhood leukemia after ALL and third most common disorder causing childhood thrombocytopenia and 30 (15%) cases were diagnosed in the study. In AML, male to female ratio was 2.75:1. Male excess in AML has been reported by various Pakistani studies such as by Zaki who reported a ratio of 3.6:1. Male excess of 1.25:1 has also been reported by international studies such as by Lava. The mean age of children with AML in our study was 6.41±3.9 which is comparable with 6.9±3.5 as reported by Lava. However, mean age in our study is lower than reported by Zaki who reported 8±5 (SD), but total number of cases was also less in his study.

Immune thrombocytopenic purpura was the next common disorder causing childhood thrombocytopenia. Twenty-eight (14%) cases of ITP were diagnosed, with a male to female ratio of 0.75:1. In contrary to ALL, AML and hypoplastic/aplastic anaemia, female preponderance in ITP was observed. However, in some international and local studies male excess has been reported. The likely reason for this female preponderance may be socio-cultural. The age of onset in ITP is quite variable. The mean age in our study was 5.22±3.83 with almost similar results in other local and international studies.

**Conclusion**

Although the sample size was small, considering the fact that Children Hospital and Services Hospital are the pediatric referral centers and children admitted here represent a cross section of our society. Therefore, the conclusion drawn may be representative of the various aspects of the problems in this country and will have a fair degree of reliability.

The conclusion drawn from our study is that thrombocytopenia appears to affect all age groups and both sexes of children and acute lymphoblastic leukemia was found to be the most common cause of childhood thrombocytopenia.
References


Original Article

Incidence of Cholesteatoma in Chronic Suppurative Otitis Media, Atticoantral Disease

Muhammad Farooq Khan, Javed Iqbal, Asghar Ullah Khan and Mohammad Amjad

Background: Atticoantral variety of chronic suppurative otitis media also referred to as unsafe is a deep-seated inflammation of middle ear cleft involving underlying bone and is usually associated with cholesteatoma. The purpose of study was to see the presence of cholesteatoma in clinically diagnosed cases of chronic suppurative otitis media atticoantral type.

Material and Methods: Sixty cases of chronic suppurative otitis media clinically diagnosed as atticoantral variety were included in this study. These patients had attic, marginal or total perforation and foul smelling discharge of more than two years duration. Mastoid exploration was done and findings were recorded for cholesteatoma and non-cholesteatoma ears.

Results: Cholesteatoma was found in 45 patients (75%), and only granulations were seen in 15 patients (25%).

Conclusion: Patients having long standing foul smelling discharge and attic perforation always have underlying cholesteatoma or granulation tissue.

Key Words: Chronic suppurative otitis media, Cholesteatoma, Granulations.

Introduction

Chronic suppurative otitis media is a common condition; it is the inflammation of the middle ear cleft lasting for more than twelve weeks duration. Atticoantral type of chronic suppurative otitis media is unsafe variety because of its destructive nature and it is usually associated with cholesteatoma.

Atticoantral disease most commonly involves attic and is characterized by formation of retraction pockets in which keratin accumulates to produce cholesteatoma. In atticoantral disease, discharge is generally persistent, foul smelling, scantly and some times blood stained which appears due to osteitis and formation of granulation tissue.

Chronic suppurative otitis media and cholesteatoma have been recognized as destructive lesions of the skull base that can erode and destroy important structures within the temporal bone. Besides local tissue changes, it results in wide spectrum of tympanic membrane and ossicular defects. This damage is due to the proteolytic activity of the inflammatory by-products and the micro flora of chronic suppurative otitis media. Cholesteatoma is a cystic structure lined by keratinized stratified squamous epithelium resting on fibrous stroma of variable thickness, which may be having some elements of original mucous lining. Cholesteatoma does spread in and across the middle ear cleft with a potential to lead to both intra and extra cranial complications. Finding of cholesteatoma is a hallmark in labeling chronic suppurative otitis media as an atticoantral variety recently called bony disease.

In Pakistan, on population based randomized sample survey, cholesteatoma was found in 7.75% cases of chronic suppurative otitis media. In Thailand, Lekagul et al in their ear camps have noted a decline in the prevalence of cholesteatoma in both urban and rural population. In Pakistan, one study was conducted during 1996-1998 through ear camps in which there was a significantly low prevalence of cholesteatoma even in the villages of Baluchistan and interior Sindh. According to a recently published study, cholesteatoma was found in 8% of chronic suppurative otitis media.

The present study aimed to see the presence of cholesteatoma in clinically diagnosed cases of atticoantral type of chronic suppurative otitis media.

Material and Methods

This prospective study was conducted in department of ENT- I Services Hospital, Lahore from 1st June 2004 to 30th May 2006. Sixty patients with chronic discharging ears who presented in out-patient department were selected. All 60 patients were clinically diagnosed to be cases of chronic suppurative otitis media atticoantral type.

Evaluation of the patients was done by clinical history, ENT examination, otoscopy and ear examination under microscope. Pure tone audiogram (PTA) and X-rays of the mastoid were done to
evaluate the extent of the disease. Mastoid was explored and special attention was paid to the presence of cholesteatoma and its complications and the findings noted.

<table>
<thead>
<tr>
<th>Table-1: Site of perforation</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.# Frequency n % age</td>
</tr>
<tr>
<td>1 Attic Perforation 03 58%</td>
</tr>
<tr>
<td>2 Posterior marginal perforation 16 33%</td>
</tr>
<tr>
<td>3 Total perforation 05 9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table-2: Mastoid procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.# Frequency n % age</td>
</tr>
<tr>
<td>1 Modified radical mastoidectomy 40 67%</td>
</tr>
<tr>
<td>2 Radical mastoidectomy 10 17%</td>
</tr>
<tr>
<td>3 Combined approx. tympanoplasty 08 13%</td>
</tr>
<tr>
<td>4 Extended cortical mastoidectomy 02 03%</td>
</tr>
</tbody>
</table>

Fig-1: Percentage of Cholesteatoma & Granulations

Discussion
Chronic suppurative otitis media remains a prime infection of middle ear and mastoid cavity in our region. Finding of cholesteatoma is a hallmark in labeling chronic suppurative otitis media as an atticocanal variety. In our study twenty-seven (45%) patients had cholesteatoma and granulation tissue. Cholesteatoma was found alone in 18 patients (30%) and granulation tissue in 15 patients (25%). We compared our results with local and international studies. In one study by Mushtaq Ali Memon et al., cholesteatoma was found in 8% of chronic suppurative otitis media. However in their study 92% patients had central perforation and only 8% had marginal perforation. This low prevalence of cholesteatoma was seen because cases of chronic suppurative otitis media sub tympanic type were selected whereas cholesteatoma is a characteristic of chronic suppurative otitis media atticocanal type.

Results
Out of 60 patients having chronic suppurative otitis media atticocanal type, 35 (58%) were males and 25 (42%) were females. These patients had age ranging from 12 to 45 years. Fifty five patients (92%) had unilateral disease and 5 patients (8%) had bilateral disease. All 60 patients had foul smelling discharge and among them 20 patients (33%) had blood stained discharge. Average duration was more than 2 years. Thirty-five patients (58%) showed attic perforation. Posterior marginal perforation was seen in 20 patients (33%) and five patients (9%) had total perforation (Table 1). Examination under microscope showed cholesteatoma and granulations in 12 patients (20%). Cholesteatoma flakes were seen in 18 patients (30%) and no cholesteatoma or granulation was found in the remaining patients on examination under microscope. Mixed hearing loss was seen in 36 patients (60%) and 24 patients (40%) had conductive hearing loss. Modified radical mastoidectomy was performed in 40 patients (67%) and radical mastoidectomy in 10 patients (17%). In 8 patients (13%) combined approach tympanoplasty and in 2 patients (3%) extended cortical mastoidectomy was performed according to the extent of disease (Table 2). Ossicles were involved in 57 (95%) patients. In 25 (42%) patients, all three ossicles were involved. Twenty-seven patients (45%) had cholesteatoma and granulation tissues. Cholesteatoma was found alone in 18 patients (30%) and granulation tissue in 15 patients (25%) (Fig 1).
9.2 per 100,000 inhabitants. In our study, the high incidence of cholesteatoma was seen because we had selected cases of attic antral variety of chronic suppurative otitis media having foul smelling discharge and attic or marginal perforation. Atticoantral disease most commonly involves attic and in our study 35 patients (58%) showed attic involvement. All 60 patients had foul smelling discharge and among them 20 patients (33%) had blood stained discharge. Similar incidence of discharge was seen in the series of Udepurwala et al.[10] Cholesteatoma is destructive disease and has caused ossicular damage in 92% cases in our series and similar incidence of ossicular involvement was seen in Paul in 1999[11] and Takin and Osmanseris 2002.[12]

Conclusion
Cholesteatoma is commonly found in patients having persistent foul-smelling and blood stained discharge. Atticoantral type is a dangerous variety of chronic suppurative otitis media because of its destructive nature. Cholesteatoma usually involves ossicular chain resulting in hearing impairment. Patients having marginal and attic perforation always have underlying cholesteatoma and/or granulation tissue. Patients diagnosed as attic antral type of disease should be explored to avoid the intra and extra cranial complications of cholesteatoma.

References
Original Article

Posterior Urethral Valve: Effects of Delay in Presentation

Irfan Mirza

Objectives: Evaluation of effects of delay in presentation on the growth and general health of patients of PUV.

Material and Methods: Clinical data of consecutive 25, radiologically diagnosed and endoscopically confirmed cases of posterior urethral valve was collected from the hospital record to study referral pattern, age at presentation, state of health (weight, height, hemoglobin level and serum creatinine level) at the time of presentation and severity of disease.

Results: A little more than 50% of patients were referred by adult urologists while 20% patients came through their pediatricians. Only 2 patients presented in the neonatal age. Those who presented in the neonatal age had their weight and height well within normal range while 61% of patients presenting beyond neonatal age had their weight below the 3rd percentile for age and 65% of them had their height below the third percentile. Similarly those patients who presented in the neonatal age had their hemoglobin levels within normal range while 74% of patients presenting beyond neonatal life were anaemic. Serum creatinine level was raised in both the neonates but returned to normal or near normal after treatment while it persisted at a level above normal for patients who presented beyond neonatal age.

Conclusion: There seems to be a need to improve awareness about this disease within the profession as well in the general public. Delay in referral significantly interferes with the growth and development of these patients.

Key Words: Posterior urethral valve, COPUM.

Introduction

There is no disease in pediatric urology which is as devastating and yet as common as posterior urethral valve in a male child. Although the name 'valve' has been challenged and in its place the term congenital obstructive posterior urethral membrane (COPUM) has been suggested,1-2, the principles of treatment have remained unchanged. Antenatal diagnosis and early relief of obstruction are the most important components of management but unfortunately late presentation still mars the final outcome of this treatable condition. This paper attempts to study the clinical course of this disease in patients presenting at a district level.

Material and Methods

A retrospective study was conducted on 25 consecutive patients of posterior urethral valve, treated over a period of two and a half years (between June 2000 and December 2002). The following data was retrieved from the patient record files and analyzed:

Mode of referral (referred by a pediatrician, pediatric surgeon, adult urologist, general surgeon, family physician or others) was looked for and this was available in 20 cases.

Age at the time of presentation was studied in all the 25 cases and patients were divided into two groups, those who presented in the neonatal age were placed in one group and those who presented after neonatal age were placed in another group and their weight, height, hemoglobin levels and serum creatinine levels before and after the treatment were compared.

Weight at the time of presentation was studied in 25 patients as plotted on percentile chart for the age and patients were divided into two groups and compared; those at or below the 3rd percentile for age were placed in one group and those above 3rd percentile for age were placed in another group.

Height at the time of presentation could be studied in 18 cases out of 25 and these patients were divided into two groups and compared. One group comprised of those at or below 3rd percentile for age and the other group consisted of those who were above the 3rd percentile for age.

Hemoglobin level, at the time of presentation could be studied in 20 patients. Patients were again divided into 2 groups and compared, those having hemoglobin at or above 10 g/dl and those having their hemoglobin value below 10 g/dl.

Serum creatinine level, as noted at the time of presentation could be retrieved in 23 patients. Again
two groups of patients were made, those having serum creatinine level at or below 1 mg/dl and those having their serum creatinine above 1 mg/dl.

Results
Out of 25, 13 (52%) patients were referred to us by adult urologists whereas 3 (12%) patients came to us through pediatricians. One patient each was referred by a general surgeon, a family physician and a trainee resident of pediatric surgery. Remaining 6 patients sought treatment on their own. Twenty three (92%) patients presented to us beyond the neonatal age whereas 2 (8%) patients sought treatment within 4 weeks of delivery. Those patients who presented in the neonatal age had their weight well above the third percentile (25th and 36th percentile) while in the group that presented beyond neonatal age, only 9 (39%) patients had their weight above the third percentile for the age.

Height record could be found in 19 patients. Both the patients who had presented in the neonatal life had their height near 50th percentile while 11 (65%) out of 17 patients presenting after neonatal life had their height below the 3rd percentile for the age.

Record of hemoglobin estimation was available in 21 patients. Both the patients presenting within neonatal age had their hemoglobin level above 15 g/dl (well within normal range for the age) while 14 (74%) of the patients presenting beyond neonatal age were anaemic (hemoglobin level below 12 g/dl).

Serum creatinine estimation record was available in 23 patients. This was raised at the time of presentation in both the neonates (4.4 mg/dl and 0.9 mg/dl) and returned to near normal or normal (0.7 mg/dl and 0.4 mg/dl respectively) after treatment. In the group that presented late, serum creatinine was above 1.0 mg/dl in 9 (43%) out of 21 patients and persisted above normal in 4 (19%) cases.

Discussion
A very interesting referral pattern has been observed in this study. Generally, pediatrician is considered as the family physician of pediatric age group and he is expected to refer such patients to an appropriate professional. Our experience however, has been quite different. We received more than 50% of our patients through adult urologists while only 12% of patients came through a pediatrician. Thirty six percent of patients came through other sources. As we regularly receive all other pediatric surgical cases from most of the pediatricians of the region, this may reflect underestimation of the presenting features by colleagues from within the profession.

It is reported with great concern that only 8% of patients suffering from a disease which could have very easily been picked during antenatal ultrasound scans reached us in the neonatal age. This compares poorly with the pattern of presentation in the developed world where 25-50% of patients present in the neonatal life. One reason of this could be poor access of majority of our mothers to an antenatal service. However this could also suggest that those who are performing antenatal ultrasound scans need more training to improve their diagnostic skills.

The fact that both the patients who presented in neonatal age had their weight, height and hemoglobin levels within normal limits further stresses on the need for early diagnosis and referral of this treatable disease. Those patients who are denied proper treatment for long start lagging behind in their growth and may find it difficult to catch up with the healthy population.

Though majority of our patients presented late, more than 50% of our patients had their serum creatinine at or below 1 mg/dl at the time of admission. However, out of those patients in whom serum creatinine was raised above normal at the time of presentation, neonates showed a better recovery than those who presented late. Serum creatinine does not seem to correlate very well with the somatic growth and merits to be evaluated further.

Conclusion
There is an urgent need for creating awareness regarding antenatal diagnosis of this disease both within our profession and in the community.
If definitive treatment is denied for long, this form of obstructive uropathy can adversely affect the growth and general health of the patients.
References


**Objective:** Study was planned to examine the effects of Niacin (Vitamin B-3) on serum LDL Cholesterol levels.

**Patients and Methods:** Study was conducted at department of Pharmacology, Basic Medical Sciences Institute (BMSI), Jinnah Postgraduate Medical Centre (JPMC), Karachi, from January 2002 to July 2002. Forty hyperlipidemic patients were included, among which 20 patients were on placebo as control group and 20 were on tablet Niacin. 2 gram daily, in divided doses for a period of three months. Patients with diabetes mellitus, peptic ulcer, renal disease, hepatic disease, hypothyroidism and alcoholism were excluded from the study. Serum LDL-cholesterol was calculated by Friedwald formula (LDL-Cholesterol = Total Cholesterol-(Triglycerides/5 + HDL-Cholesterol) described by Delong et al (1986) and Beamount et al (1970). Data were expressed as the mean ± SD and "t" test was applied to determine statistical significance of the difference. A probability value of <0.05 was the limit of significance.

**Results:** Three patients were dropped from the study due to side effects of Niacin. Niacin decreased the levels of LDL-Cholesterol from 182.5±8.74 mg/dl to 119.29±4.08 mg/dl, which was highly significant (p<0.001), when compared statistically by paired "t" test. Overall percentage (%) changes from day-0 to day-90 were -34.66.

**Conclusion:** Niacin decreases the risk of CHD by decreasing LDL-Cholesterol.

**Key Words:** Niacin, LDL-Cholesterol, Atherosclerosis, Primary hyperlipidemia.

**Introduction**
Hypertension and coronary heart disease (CHD) are diseases of great importance. CHD is the cause of death in 50% of males and 22% of females in England and Wales. In Pakistan 46% cardiac deaths are due to myocardial infarction and 23% are due to other subsets of ischemic heart disease. 70% of these patients die even before any medical help is made available to them. Major risk factors associated with the development of CHD include gender, age, cigarette smoking, diabetes mellitus, hypertension and hyperlipidemia. LDL is a major risk factor for the development of atherosclerosis which in turn leads to CHD.

Certain plasma lipoproteins are linked to accelerated atherogenesis. The lipoproteins that contain apoprotein (apo) B-100 have been identified as the vehicles in which cholesterol is transported into the artery wall. These atherogenic lipoproteins are LDL, IDL, VLDL and LP (a) lipoproteins. Oxidation of lipoproteins leads to their uptake by receptors on these cells, forming foam cells in which cholesterol esters accumulate. Atherosclerotic disease of both coronary and peripheral arteries appears to be a dynamic process. Evidence from studies both in animals and humans indicate that progression can be slowed if elevated serum concentrations of the atherogenic lipoproteins can be reduced. Reversal of atheromas has been demonstrated in animals and, more recently, in humans following drug treatment of hyperlipidemia.

There are various drugs which decrease total cholesterol, triglycerides, LDL-C and increase HDL-C in primary hyperlipidemic patients, but Niacin is the best LDL-C decreasing agent among the lipid lowering drugs. Niacin inhibits the activity of hormone sensitive lipase causing decrease in lipolysis and so decreased VLDL secretion from hepatocytes. Factors responsible for decreased production of VLDL include inhibition of lipolysis with a decrease in free fatty acids in plasma, decreased hepatic esterification of triglycerides and a possible direct effect on the hepatic production of apolipoprotein B. Niacin also increases HDL-C by reducing its catabolism. It also decreases plasma fibrinogen levels and increases tissue plasminogen activator levels. All of these factors influence the process of atherogenesis and CHD.
**Patients and Methods**

This study was conducted at department of Pharmacology and Therapeutics, Basic Medical Sciences Institute, Jinnah Postgraduate Medical Centre, Karachi, from January to July 2002. Forty patients of primary hyperlipidemia were initially enrolled in this study, selected from ward and OPD of National Institute of Cardiovascular Diseases, Karachi. Newly diagnosed and untreated primary hyperlipidemic patients of either sex, age range from 17 to 70 years were randomly selected. Patients with diabetes mellitus, peptic ulcer, renal disease, hepatic disease, hypothyroidism and alcoholism were excluded from the study by available laboratory investigations, history and clinical examination. After explaining the limitations, written consent was obtained from all participants. The study period consisted of 90 days with fortnightly follow up visits. The required information such as name, age, sex, occupation, address, previous medication, date of follow up visit and laboratory investigations etc of each patient was recorded on a proforma specially designed for this study. Initially, a detailed medical history and physical examination of all patients was carried out. All the baseline assessments were taken on the day of inclusion (Day-0) in the study and a similar assessment was taken on Day-90 of research design. After fulfilling the inclusion criteria, patients were randomly divided into two groups, i.e. drug-1 (Niacin 2 gm) and drug-2 (placebo capsules, containing equal amounts of partly grinded wheat) groups. Patients of drug-1 group were advised to take Tab. Niacin (250 mg) half tablet thrice daily after meals for 2 days, then increasing the dose to one tablet TID after meals for 2 days, then 2 tablets thrice daily after meals for 2 days, then the maintenance dose of 3 tablets thrice daily after meals till the end of the study period, i.e. up to day-90. This regimen (called titration of Niacin) was applied in order to avoid its adverse effects produced by starting with higher doses. 17 patients of drug-2 group were provided placebo capsules, i.e. one capsule TID after meals for 90 days. Patients were called every 2 weeks for follow up to check blood pressure, weight, pulse rate and general appearance of the individual. Drug compliance to the regimen was monitored by interviewing and counseling at each clinical visit. Serum LDL-cholesterol was calculated by Friedwald formula9@ (LDL-C = Total Cholesterol - (Triglycerides/5 + HDL-C) described by Delong et al (1986)37 and Beamount et al (1970).11 Data were expressed as the mean ± SD and "t" test was applied to determine statistical significance of the difference. A probability value of <0.05 was considered as significant.

**Results**

Out of 40 patients, 37 completed the study period. Three patients withdrew from one group (Niacin group) due to side effects of the drug like flushing, sensation of heat, urticaria and headache. Tables showing baseline and post treatment values are self explanatory. When results were summed up and test parameters were compared, it was seen that after 90 days of treatment with Niacin, LDL-Cholesterol decreased from 182.58±8.74 mg/dl to 119.29±4.08 mg/dl, which is highly significant (p<0.001). The overall percentage change from day-0 to day-90 was -34.66, as shown in **Table 1**. In placebo group at day-0, LDL-Cholesterol level was 150.75±2.67 mg/dl which decreased to 148.80±2.28 mg/dl, which is non-significant (p>0.05). The overall percentage decrease in the parameter was -1.29 (**Table 2**). The difference between mean values among placebo group and Niacin group is 33.4, which is highly significant (p<0.001) as shown in the **Table 3**.

**Table 1:** Changes in LDL-Cholesterol in Niacin group of patients (n=17)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>at Day-0</th>
<th>at Day-90</th>
<th>%Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDL-C(mg/dl)</td>
<td>182.58±8.74</td>
<td>119.29±4.08</td>
<td>-34.66</td>
</tr>
</tbody>
</table>

*Key: ± indicates standard error of mean*

**Table 2:** Changes in LDL-Cholesterol in placebo group of patients (n=20)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>at Day-0</th>
<th>at Day-90</th>
<th>%Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDL-C(mg/dl)</td>
<td>150.75±2.67</td>
<td>148.80±2.28</td>
<td>-1.29</td>
</tr>
</tbody>
</table>

*Key: ± indicates standard error of mean*

**Table 3:** Difference of changes in LDL-Cholesterol between placebo and Niacin group of patients in 90 days of treatment

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Baseline</th>
<th>Post Treatment</th>
<th>P Value</th>
<th>Baseline</th>
<th>Post Treatment</th>
<th>P Value</th>
<th>%Difference in groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDL-C(mg/dl)</td>
<td>150.75±2.67</td>
<td>148.80±2.28</td>
<td>&lt;0.05</td>
<td>150.41±6.94</td>
<td></td>
<td>&lt;0.001</td>
<td>33.4</td>
</tr>
</tbody>
</table>

*Key: ± indicates standard error of mean, p Value >0.05 indicates non significant, p Value <0.001 indicates highly significant*
Discussion
Among the lipid lowering drugs, Niacin appears to be the best LDL decreasing agent. In our study, LDL-Cholesterol levels decreased by 3.46% in men and women with high LDL-C levels treated with a medium dose of Niacin (2 gm/day). The drug has another advantage of being inexpensive. Levels of LDL-C were maintained throughout the 3 months of study period with the therapy. This finding coincides with the study of Martin-jadraque et al. Treatment with placebo capsules for 90 days decreased LDL-Cholesterol by 1.29% as compared to 3.7% decrease in a study by lipid Research Clinics. A 7% increase in HDL-Cholesterol has also been quoted in another study by Rivellese et al. It was demonstrated by Miller et al. that long distance runners have much less LDL-Cholesterol concentration as compared to sedentary subjects. The decrease in LDL-C concentration by physical training may be a consequence of enhanced catabolism of triglycerides rich lipoproteins (VLDL). It was observed by McKinney et al. that high dose of crystalline Niacin decreased concentration of LDL-C by 39%. This observation is in contrast with our observation, probably due to small sample size and low dose of the drug. They used 6gm of Niacin in 80 patients for a period of four months. Drop out rate in our study was 9% and most of the patients discontinued treatment due to development of side effects like flushing, urticaria and sensation of heat in the body. Other patients were convinced for continuing therapy, by dose concentration regimen (titration) of Niacin or taking aspirin 250 mg OD, before taking 1st dose of drug in the morning. Wilkin et al have described the mechanism by which aspirin blocks Niacin induced flushing. Stern et al. has mentioned that tolerance is developed for flushing, urticaria and h热ness in body by dose titration of Niacin.

References
Frequency and Distribution of Different Types of Breast Carcinoma

Sarah Riaz, Shahila Jalil, Abdul Shakoor and Bilquis A Suleman

Background: To find out frequency and distribution of different types of breast carcinoma in mastectomy specimens.

Subjects and Methods: It was an observational study conducted in the Department of Histopathology, Shaikh Zayed Hospital, Lahore. The study comprised of a convenient sample of 30 female patients above 30 years of age undergoing modified radical mastectomy for carcinoma during a period of six months from December 2004 to May 2005.

Results: A total of 30 mastectomy specimens of 30 female patients of age 30-79 years were included. A slightly greater proportion of patients (56.67%) had the tumour on the right side whereas 43.30% had it on the left side. Out of these thirty carcinomas, 25 cases were ductal whereas 4 were lobular.

Conclusion: Majority of the patients in our study were in the fifth and fourth decade of life. Slightly greater proportion of patients had the carcinoma in the upper outer quadrant of right breast. Infiltrating ductal carcinoma was the commonest type.

Keywords: Breast tumour, Neoplasms, Carcinoma, Lobular, Ductal

Introduction
Breast carcinoma is the commonest female malignancy and about 250,000 women die of this disease every year. The incidence of this disease is on the rise in our society with more than half of the population at risk. Its incidence is also increasing in all the western countries. This increased incidence can be due in part, to more aged people in general population, because increasing age is one of the strongest risk factors for breast carcinoma. Lesions of the breast are mostly confined to the female and so is breast carcinoma because of the greater breast volume, the more complex breast structure and the extreme sensitivity to endocrine influences. Breast cancer is a serious disease and an important cause of premature mortality and morbidity. It is uncommon before twenty five years of age but then there is a steady rise throughout life.

About 80% or more of all breast carcinomas are ductal carcinomas which are subdivided into:

- Ductal Carcinoma In Situ (DCIS)
- Infiltrating Ductal Carcinoma (IDC)

Other types include lobular, medullary, mucinous, tubular, papillary and metaplastic carcinomas.

In several studies its incidence is reported to be higher in upper outer quadrant of left breast.

Objectives
The purpose of this study was to evaluate the morphology of carcinoma breast and to find out the frequency of its different types and its distribution in modified radical mastectomy specimens received at Department of Histopathology, Shaikh Zayed Hospital, Lahore.

Material and Methods
This was a descriptive study conducted in the Department of Histopathology, Shaikh Zayed Hospital, Lahore which is a tertiary care 700 bedded teaching hospital.

The study comprised of a convenient sample of 30 female patients above thirty years of age undergoing modified radical mastectomy for carcinoma breast during a period of six months from December 2004 to May 2005.

Following specimens were excluded from the study sample:
1) Lumpectomies for carcinoma breast and for benign neoplasia
2) Benign neoplasia
3) Specimens without lymph nodes
4) Pure in situ carcinomas

The specimens of modified radical mastectomy were fixed in 10% formalin after surgery and brought to the Department of Histopathology, Shaikh Zayed Hospital, Lahore. Detailed gross examination with serial one centimeter thick slicing was done and tumour slices were embedded in chronological order. Sections were also taken from the nipple for evidence of Paget's disease.

All sections were processed in an automatic tissue processor and paraffin-embedded tissue blocks made. Multiple slides were made with thickness ranging from 3 to 5 microns and stained with haematoxylin and eosin stain. Each slide was numbered and examined under the microscope.
Results
A total of 30 formalin fixed modified radical mastectomy specimens were included in this study. The age of these patients ranged from 30-79 years with a mean of 47.3± 11.28 years. The maximum number of patients (12 i.e. 40%) was between 40-49 years of age (Table 1). A slightly greater proportion of patients (56.67%) had the tumour on the right side (Table 2). Of these thirty cases of modified radical mastectomy, most of the tumors (43.3%) were in the upper outer quadrant (Table 3). Out of these thirty carcinomas, 25 cases were ductal in type whereas 4 were lobular carcinomas (Table 4).

Table 1: Distribution of carcinoma breast by age (n=30)

<table>
<thead>
<tr>
<th>Age</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 - 39</td>
<td>7</td>
<td>23.33%</td>
</tr>
<tr>
<td>40 - 49</td>
<td>12</td>
<td>40.00%</td>
</tr>
<tr>
<td>50 - 59</td>
<td>6</td>
<td>20.00%</td>
</tr>
<tr>
<td>60 - 69</td>
<td>4</td>
<td>13.33%</td>
</tr>
<tr>
<td>70 - 79</td>
<td>1</td>
<td>03.33%</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2: Distribution of carcinoma breast by laterality (n=30)

<table>
<thead>
<tr>
<th>Side</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right</td>
<td>17</td>
<td>56.67%</td>
</tr>
<tr>
<td>Left</td>
<td>13</td>
<td>43.33%</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 3: Distribution of carcinoma breast by anatomical site (n=30)

<table>
<thead>
<tr>
<th>Location</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUQ</td>
<td>13</td>
<td>43.33%</td>
</tr>
<tr>
<td>LOQ</td>
<td>5</td>
<td>16.67%</td>
</tr>
<tr>
<td>LIQ</td>
<td>1</td>
<td>03.33%</td>
</tr>
<tr>
<td>UIQ</td>
<td>2</td>
<td>06.67%</td>
</tr>
<tr>
<td>Whole breast</td>
<td>4</td>
<td>13.33%</td>
</tr>
<tr>
<td>Lower half</td>
<td>2</td>
<td>06.67%</td>
</tr>
<tr>
<td>Lateral half</td>
<td>3</td>
<td>10.00%</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4: Distribution of cases by histologic types (n=30)

<table>
<thead>
<tr>
<th>Type</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ductal</td>
<td>25</td>
<td>83.34%</td>
</tr>
<tr>
<td>Lobular</td>
<td>4</td>
<td>16.67%</td>
</tr>
<tr>
<td>Others (Mixed)</td>
<td>1</td>
<td>03.33%</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100%</td>
</tr>
</tbody>
</table>

Discussion
Breast carcinoma is the commonest malignancy among women worldwide. It is the fourth common cause of death among women. All women above 30 years of age are at an increased risk of developing breast carcinoma. Our study was focused on finding the distribution and typing of breast carcinoma and comparing the findings with similar studies conducted in Pakistan and abroad. All patients were above 30 years of age. The largest number of cases i.e. 12 (40%) were between 40-49 years of age. This is comparable to a local study and two international studies in which the respective values were 31%, 44% and 29.5%. Regarding laterality, our study is comparable with two other studies from Pakistan. In our study, more patients (56.67%) had the tumour in the right than the left breast. In two local studies, involvement of right breast was 51% and 60% respectively. As far as location of tumor is concerned, 46% of the cases had tumour in the upper outer quadrant. This figure is comparable with the local study by Ghumro. The commonest tumor was infiltrating ductal carcinoma i.e. 83.33%. This is comparable to several local studies in which the respective values were 82.9%, 89.22%, 81%, 86.8% and 94%. Our study was also comparable to two Egyptian studies, in which the value being 84% and 88.8% respectively, and to a Taiwanese study in which 83% cases were IDCs. Cases of invasive lobular carcinoma were 13.33% comparable with incidence range reported in literature and also to a recent foreign study in which the value corresponds to 8.2%.

Conclusions
1. Majority of the patients in our study were in the fifth, followed by the fourth decade of life.
2. Infiltrating ductal carcinoma was the commonest type.
3. Our study was compared with similar local and foreign studies, and most of the values were comparable.

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References

Original Article

Do We Really Need to Arrange Blood for All Patients Undergoing C-Section?

Lubna Riaz Dar and Shaherzad Sohail

Objective: To find out whether it is really necessary to arrange blood for all patients undergoing C-Section in our setup.

Patients & Methods: This cross sectional study was conducted at Shalamar Hospital Lahore from October 2008 to August 2009. All patients undergoing C-section both emergency and elective under care of the authors were included in the study. Age and parity was noted and indication of C-Section was determined. Their hemoglobin was determined by cyanohemoglobin method. The need for blood transfusion and its possible indication was assessed in all patients. The intraoperative and postoperative complications were also noted. The average cost of cross matching and arrangement of one unit of blood in different hospitals of Lahore was also noted.

Results: Out of 351 patients who underwent C-Section, 27 patients required blood transfusion. Common indication was massive hemorrhage due to placenta previa, abruption, previous surgeries, twin pregnancy and uterine atony. Other indication for transfusion was Hb less than 8 gm% at term. The calculated cost of cross matching and arrangement of one unit of blood was 1500 to 2400 Pak rupees.

Conclusion: It is not cost effective to arrange blood for all patients undergoing C-Section as a routine. It should be limited to the high risk patients like those with placenta previa, previous surgeries and significant anemia.

Key Words: Blood Transfusion, C Section, Hemorrhage.

Introduction

Blood transfusion is associated with many hazards; 5% of patients receiving blood transfusion are expected to develop some sort of reaction ranging from mild to severe. Allergic reactions, acute febrile illness, metabolic disturbance and circulatory overload are important risks. Spread of Hepatitis B, C and HIV are the major public health concerns and blood and its products are major source of their spread.

Hemolytic transfusion reactions due to incorrect sampling and clinical errors may be life threatening. Due to the hazards associated with blood transfusion it should be limited to patients who really need it.

RCOG guidelines also offer guidance about the appropriate use of blood and its products.

The audit to review blood transfusion practices in developing countries by Ozumba BC and Ezegwe HU also suggested that efforts should be made to decrease blood transfusion without increasing maternal morbidity.

In Pakistan, the blood transfusion services are still in developmental phase and the system is entirely dependent on the relatives for provision of blood and its products; at the same time the relatives also pay for these services which costs them money and puts extra financial burden on them.

This study was designed as an audit to find out whether it was really necessary to arrange blood for all patients undergoing C-Section in local perspective and to identify high risk cases where such an arrangement was entirely necessary.

Patients and Methods

This study was conducted in the department of Obstetrics and Gynecology in Shalamar Hospital Lahore, from October 2008 to May 2009 for a duration eight months. All the patients undergoing C-Section under care of the authors were included in the study.

The age and parity of all patients was noted. The indication of C-Section was also recorded. Pre-operative hemoglobin was determined by cyanohemoglobin method. The need and indication for blood transfusion was recorded for all cases. Any intra-operative or post-operative complications were also noted. All the above variables were recorded on a pre designed proforma. The cost of arrangement of one unit of blood in different major hospitals of Lahore was determined by the authors personally or on telephone.

Data was analyzed by using SPSS version 14. Number
of patients requiring blood transfusion was presented in percentage; Student’s t test was used to compare significance of proportion between the patients who required blood transfusion and those who did not.

Results
During the study period, 351 women underwent C-Section. Out of these 351 women, 191 had emergency and 160 had elective C-Section. The age of the patients ranged between 19 and 38 years. The mean age was 30 years. The parity of patients was from 1 to 5 and mean parity was 3.

Pre-op hemoglobin determined by cyanohemoglobin method showed that 57.8% had Hb% less than 11 gm%. (Table 1). The most common indications of emergency C-Section were failure to progress and fetal distress. Common indications for elective C-Section were repeated LSCS due to previous II or III LSCS.

![Fig-1: Out of 351 patients only 27 required Blood Transfusion](image)

The patients who needed blood transfusions were 27 out of 351 total patients (7.6%). The most common indication for blood transfusion was excessive hemorrhage due to placenta previa or previous surgeries. Other women who had blood transfusion were those who had Hb 8 or less than 8 gm%. (Table 2). The average cost for cross matching and arrangement of one unit of blood in private setup was calculated to be 1500 to 2400 Pak rupees; in Government hospitals it was charged according to the policies of the government.

<table>
<thead>
<tr>
<th>Hemoglobin</th>
<th>No. of Patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-9gm%</td>
<td>19</td>
<td>5.5%</td>
</tr>
<tr>
<td>9-10gm%</td>
<td>184</td>
<td>52.4%</td>
</tr>
<tr>
<td>&gt;10gm%</td>
<td>148</td>
<td>42.1%</td>
</tr>
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</table>

*P* value= 0.072 (Statistically not significant)

Discussion
Blood transfusion is life saving in massive obstetric hemorrhage but is not always required for all the patients undergoing C-section. A study was conducted at medical college of Virginia Hospital about red blood cell transfusion and C-section. The objective of the study was to determine the incidence of blood transfusion in patients delivered by C-section and to identify the risk factors predicting the need for transfusion. The study was conducted over a year. Results showed that 6.8% patients received blood transfusion and transfusion was associated with lower gestational age, antepartum bleeding, arrest of descent of head and long post-operative stay. Another audit of 463 consecutive C-sections and blood transfusions over a year period was undertaken by Ozumba BC and Ezegwui HU in a developing country. Total of 117 out of 463 (25.2%) C-section patients received blood transfusions.

One study was conducted in Agha Khan Hospital, Karachi to evaluate the blood ordering practice and blood transfusion for C-sections. A review of 126 patients undergoing C-section showed that 215 units were cross matched for 126 patients and only 9.5% of the total was transfused intra-operatively and 5.5% post-operatively. They recommended that the practice of routine cross matching prior to C-section should be re-looked into by institutions practicing obstetrical anaesthesia.

This study had a smaller sample size and was conducted for a lesser duration as compared to the above mentioned studies; yet the results were comparable. Only 7.6% patients in this study required blood transfusion.

A study conducted in a tertiary care hospital in Nigeria identified the risk factors for blood transfusion. 1,117 C-sections were performed and only 63 patients (5.6%) received blood transfusion. Risk factors predisposing to blood transfusion were lack of pre-natal care, placenta previa, grand multiparity and previous surgeries. These factors should be considered for parturients for C-section especially in developing countries.

A scenario based survey was performed to evaluate the attitude of anaesthesiologists and gynaecologists about the use of blood during C-section. Majority of people selected Hb% threshold ranging from 7.5 to 8.5gm%.

A review was conducted in department of Obstetrics and Gynecology, Wayne State University School of Medicine. The object was to review the usefulness and cost effectiveness of admission, blood type
Table 2: Indications for blood transfusion

<table>
<thead>
<tr>
<th>Indications</th>
<th>No. of Patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placenta Previa leading to excessive intra-operative blood loss</td>
<td>5</td>
<td>18.5%</td>
</tr>
<tr>
<td>Previous C-Section</td>
<td>7</td>
<td>25.91%</td>
</tr>
<tr>
<td>Uterus atony leading to excessive hemorrhage</td>
<td>4</td>
<td>14.8%</td>
</tr>
<tr>
<td>Abruption</td>
<td>2</td>
<td>7.45%</td>
</tr>
<tr>
<td>Hemoglobin less than or equal to 8gm%</td>
<td>6</td>
<td>22.2%</td>
</tr>
<tr>
<td>Pregnancy with fibroid</td>
<td>1</td>
<td>3.7%</td>
</tr>
<tr>
<td>Twin pregnancy</td>
<td>2</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

*p Value = 0.0081 (Statistically significant)*

and screen testing in patients admitted for C-Section. It was conducted for 3 years and 3962 patients underwent C-Section; only 132 (3.3%) required blood transfusion. Most of the transfusions were related to previously identified risk factors including previous C-Sections, chorioamnionitis, placenta previa abnormal presentation, multiple pregnancy, abortion and admission anaemia. Conclusions of the study was that in the absence of significant risk factors, admission screening for C-Section does not enhance patient care and should be eliminated. In this study, it was found that patients who received transfusions were those who had massive hemorrhage either due to placenta previa or due to previous surgeries. The other patients who needed blood transfusion were those who had low Hb% and those without proper antenatal care. They had reported in late pregnancy when their anaemia could not be corrected with oral or parenteral iron.

In one study, transfusion practices over the last 12 years were investigated retrospectively in 1618 women admitted for C-Section; the overall percentage of transfused patients was 2.4%. It was discovered that three conditions that increased the risk of bleeding significantly were placenta previa, abortion and coagulation disorders. To improve blood bank services for surgical procedures like C-Section which rarely require blood transfusion it was advised to recur to a type and screen procedure instead of cross matching blood but for patients identified at high risk of bleeding like placenta previa, abortion and coagulation disorders, cross matched blood should be available.

One study was conducted about appropriateness of red blood cell transfusion in peripartum patients at Sunny Brook & Women College Health Centre in Toronto between April 1994 and July 2002. They found that a significant proportion of RBC transfusions given to peripartum women were inappropriate. Educational programs that promote adherence to transfusion guidelines might help to reduce the exposure to transfusion. Aggressive oral and IV iron therapy might have prevented transfusion in 11% of women in the cohort who were possibly iron deficient. Many units of blood set aside for surgery were never required resulting in extra work and expenses for blood bank.

Patient-specific blood ordering system is more accurate in predicting who will receive a blood transfusion than the maximum ordering system. Those women who are undergoing C-Section should be assessed on individual basis and blood should be arranged for the high risk patients only. National Institute of Health and Clinical Excellence (NICE) also suggests that neither a group nor a cross match sample should be taken from a healthy woman undergoing C-Section, who has an uncomplicated history.

The average cost of one unit of blood was 1500 to 2400 Pak rupees in different private hospitals which is expensive. The expenditure was further increased when blood products were required. In our setup the relatives of the patients arranged blood by themselves which is not always easy. Most of them did not require transfusion; so this money was wasted which is not justified. This is a small study which was conducted in one hospital for short duration as an internal audit. Similar studies are required from other hospitals also. It is high time to draw a conclusion regarding blood transfusion practices with a meaningful outcome that blood should be arranged for high risk patients only.

It is not cost effective and justified to arrange blood as a routine for all patients undergoing C-Section. It should be limited to the patient at high risk for life threatening haemorrhage like with placenta previa and previous surgeries or with significant anemia.
Conclusion
It is not cost effective and justified to arrange blood as a routine for all patients undergoing C-Section. It should be limited to high risk patients for life threatening hemorrhage like with placenta previa and previous surgeries or with significant anemia.

References
A 67-Year-Old Man with Massive Hemoptysis

History
A 67 years old man who was recently diagnosed with pulmonary tuberculosis and treated with four-drug anti-tuberculous directly observed therapy for the last month presented to the emergency department with hemoptysis. The patient stated he had small amounts of blood-streaked sputum for the past 2 weeks, but noted that immediately prior to coming to the emergency department he had coughed up approximately “a cup” of bright red blood. While still in the emergency department, he had a witnessed episode of large volume hemoptysis, estimated to be greater than 250 cc of fresh blood.

The patient’s past medical history was unremarkable with the exception of longstanding tobacco abuse. Other than his recent anti-tuberculous therapy he took no regular medications. He did not regularly use aspirin or other NSAIDs. He had no history of rash, kidney disease, hematuria or known autoimmune disease. Prior to the episodes described above, he had no history of pneumonia or hemoptysis. The patient smoked one pack of cigarettes per day for the past 45 years. He did not use alcohol or other recreational drugs. He emigrated from Ethiopia to the United States 10 years earlier. The patient was single, living with his brother’s family. He worked as a carpenter until 2 to 3 months earlier when he became ill.

Physical Examination
The patient appeared uncomfortable and in distress. During the exam he continued to cough up small amounts of bright red blood. Vital signs were notable for a blood pressure of 101/60 mmHg, a heart rate of 113 beats per minute, a respiratory rate of 25-32 breaths per minute, and an oxygen saturation of 93% on a 100% oxygen via high-flow face mask. The head and neck exam was notable for the presence of blood in the oropharynx and clear mucus. The cardiac exam demonstrated tachycardia, a normal S1 and S2, and no murmur, gallop or rub. The lungs were notable for the presence of low-pitched rhonchi, right greater than left. The abdomen was benign without organomegaly. The patient’s extremities were slightly cool, without cyanosis, clubbing or edema. The skin was clear without a rash. Labs were drawn at the time of admission, prior to the episode of hemoptysis episode in the emergency department.
**Laboratory investigations**
- White blood cell count 11,000/mm³ with a slight left shift present
- Hematocrit 12%
- Platelet count was 378,000/mm³
- BUN 49 mg/dl, serum creatinine was 1.1 mg/dl
- Alkaline phosphatase 124 mg/dl
- Total bilirubin 1.4 mg/dl
- AST 50 IU/L, ALT 291 IU/L
- The patient's electrolytes and serum glucose were within normal limits.
- An INR and PTT were within normal limits.
- A urinalysis showed an elevated specific gravity and the presence of hyaline casts.

**Question 1**
The most appropriate NEXT step in the management of this patient is:
A. Urgent CT scan with IV contrast
B. Contact interventional radiology for immediate bronchial artery angiography
C. Fiberoptic flexible bronchoscopy
D. Immediate intubation
E. Immediate transfusion with 2 units of uncrossmatched O-Positive Blood

**Question 2**
Of the following choices, the MOST LIKELY etiology of hemoptysis in this patient is:
A. Epistaxis
B. Tuberculosis
C. Wegener's granulomatosis
D. Pulmonary embolus
E. Bronchogenic carcinoma

**Question 3**
The CT scan in Figure 2, 3, and 4 (arrows) demonstrates:
A. A mycetoma

![Fig 3](image1)
![Fig 4](image2)

Answer Page 41
Abdominal Pregnancy: A Case Report

Saadia S, Rabia N, Razia A, Ameelia S and Shamayela H.

Abstract: This is a case report of abdominal pregnancy (a rare condition) associated with high maternal morbidity and mortality. Persistent abdominal pain, irregular vaginal bleeding and pallor are the main clinical features. Ultrasonography is useful for early diagnosis. Management depends on the gestation at presentation and usually involves surgical intervention. The placenta in most of the cases is left in situ. An awareness of abdominal pregnancy is very important especially in this era of assisted reproductive techniques for reducing morbidity and mortality.

Key Words: Abdominal pregnancy, laparotomy, pregnancy complications and placenta, methotrexate.

Introduction
About 2% of all pregnancies are ectopic and more than 95% of ectopic gestations occur within the fallopian tubes. Abdominal pregnancies are a rare and dangerous form of ectopic gestation, where implantations occur within the peritoneal cavity and account for 1 to 4% of all ectopic pregnancies. Its incidence varies from place to place but is more common in developing countries. The worldwide incidence ranges between 1 in 4017 to 1 in 21,439. When recognized in early gestational period, immediate laparotomy with removal of fetus is usually recommended because of the maternal risks of life threatening hemorrhage and the generally poor fetal prognosis. In cases in which placental implantation has occurred in vascular areas such as small bowel mesentery, it has been recommended that the placenta be left in situ, because surgical excision can result in uncontrollable hemorrhage. Maternal mortality rates of 0.5-18% have been reported.

Diagnosis of abdominal pregnancy is difficult and high index of suspicion is required to make the diagnosis. Clinical features such as palpation of abdominopelvic mass distinct from the uterus, painful foetal movements and abnormal presentation should raise the suspicion.

Case Report
A 23 years old, un-booked, unmarried, primigravida, presented in medical OPD of Fatima Memorial Hospital on 3rd August, 2006 with complaints of lower abdominal pain and irregular vaginal bleeding off and on for one month. Her last menstrual period (LMP) was unsure. She consulted many local doctors for her abdominal pain and was given spasmolytics and antacids. She was never investigated for her abnormal vaginal bleeding and pain lower abdomen. Her menstrual cycle was regular previously. She was admitted in medical ward because of main symptom of pain abdomen where all baseline investigations and ultrasound were performed.

Physical examination showed extreme pallor; pulse was 116 beats per minute and blood pressure was 90/60 mmHg, temperature was 98°F, chest and heart sounds were normal. Abdominal examination revealed a mass of about 18 weeks size. It was non-tender with restricted mobility and there was no demonstrable ascites. Vaginal examination was not done. Investigations included Hb% of 5.2 g/dl, LFTs, RFTs and S/E were normal.

Abdominopelvic ultrasound revealed a single, live extra uterine pregnancy in right adnexa of 14 weeks, BPD 2.95 cm and FL 1.9 cm. Fetal cardiac activity and body movements were present. Amniotic fluid was adequate. Placental site was anterior in the gestational sac. Decidual reaction was seen in the uterus. Uterus was lying anterior and on left of gestational sac. There was moderate amount of free fluid in the pelvis and abdominal cavity.

Call was sent to gynecology department. Immediate laparotomy was performed by the gynecologist. Anemia was corrected by giving packed cells at laparotomy. A well formed fetus of about 14 weeks was found lying in the abdominal cavity. Placenta was implanted on the posterior aspect of uterus, broad ligament and small gut with its mesentery. About 400 cc of blood clots were removed; uterus was of about 8 weeks size. Tubes and ovaries were not visualized and were buried in adhesions posteriorly. Fetus was removed and placenta left in situ but there was bleeding from the posterior aspect of right sided broad ligament. Multiple stitches were applied to
to control the bleeding, 4 units of blood were given intra-operatively. Blood loss was about 1 to 1.5 liters. Finally 2 abdominal packs were placed over the oozing surface for pressure, drain placed and abdomen closed. Patient was kept in ICU for post operative monitoring and injection Methotrexate 50 mg was given intramuscularly. Pre operative beta-hCG was 24,800 i.u. Continuous monitoring of vitals was done and intake output record was maintained. Patient remained in ICU for next 48 hours when packs were removed. On re-laparotomy there was no active bleeding. Placenta was shelled out, drain remained in place and abdomen closed.

Patient was observed for next 7 days and she remained stable. Injection Methotrexate was repeated after 1 week. Patient was sent home with follow up of B-hCG after 1 week and for removal of stitches. Stitches were removed on 9th post operative day. Wound was indurated and there was an area of about 1 cm which failed to heal within the stitch line. Patient was sent home on antibiotics and anti-inflammatory drugs but she returned after 4 days with complaint of yellow excessive foul smelling discharge from the wound and high grade fever. On examination it was found to be a fecal matter. Consultation from surgery department was taken and diagnosis of fistula was made. She remained on total parental nutrition for 1 week to improve the general health and for spontaneous healing of low output fistula.

After 1 week re-laparotomy was done, 1 x 1 cm perforation in ileum near ileocaecal junction was found and repair was done. She remained in hospital for treatment of sepsis and sent home after one month.

Discussion
Abdominal pregnancy is a rare obstetrical complication with high maternal morbidity and mortality and even higher perinatal mortality. It could be primary or secondary to implantation of a primary tubal pregnancy in the peritoneal cavity. The latter is commonest type. The incidence of abdominal pregnancy appears to be increasing in both developed and developing countries. In the former, increasing use of assisted reproduction with embryo transfer has been associated with increasing number of heterotopic pregnancies. In developing countries, the high incidence has been reported to be due to increased risk of pelvic infections, limited diagnostic facilities for early detection of tubal pregnancies before secondary implantation in the peritoneal cavity and poor utilization of medical care by pregnant women.

Diagnosis of abdominal pregnancy is difficult and based on high index of suspicion. Clinical features like persistent abdominal pain and vaginal bleeding supported by ultrasonography makes the diagnosis easy. When abdominal pregnancy is diagnosed, the widely accepted treatment is laparotomy, because of risk of maternal mortality.

One of the challenging problems during laparotomy for abdominal pregnancy is risk of massive hemorrhage when attempts are made to remove the placenta. It is advised that except the entire blood supply of placenta can be secured, the placenta is best left in situ. If left in situ, there is the need to follow-up the patient with serial beta-hCG levels and sonograms for placental involution. Use of Methotrexate to hasten placental involution and resorption has been reported. However, it may lead to accelerated placental destruction with accumulation of necrotic tissue and ultimately infection and abscess formation. In our case necrotic tissue after use of Methotrexate led to fistula formation.

References


A 67-Year-Old Man with Massive Hemothorax

Answer question No. 1
This man is experiencing massive hemothorax, variably defined in the literature as hemothorax resulting in expectorated blood volumes of 200 to 600 ml over a 24 hour period. Although death from hemothorax is rare, massive hemothorax represents a life-threatening emergency as blood has the potential to flood the tracheo-bronchial tree resulting in asphyxiation and respiratory arrest.

The published literature lacks consensus guidelines to assist clinicians in the optimum management of massive hemothorax. Despite this, it is generally agreed that the initial care of the patient with massive hemothorax should be directed towards ensuring adequate ventilation, protection of the unaffected airways and ensuring hemodynamic stability.

The patient described above was in clear respiratory distress making immediate intubation and airway control the priority. Rapid or unrelenting hemothorax, hemodynamic instability and hypoxemia or severe dyspnea in the setting of supplemental oxygen are all indications for immediate intubation.

Endotracheal tubes with an internal diameter of 8.0 mm or greater should be selected if possible to facilitate future fiberoptic bronchoscopy or other procedures. If the side of the bleeding is known, the patient should be placed in the lateral decubitus position, with the bleeding side down, to protect the unaffected airways from spillage of blood.

Selecting airway intubation techniques or the use of a double-lumen endotracheal tube may be helpful in the management of massive hemothorax. Selective airway intubation involves placing the single-lumen endotracheal tube directly into the right or left main stem bronchus with the goal of ventilating the non-bleeding lung and simultaneously protecting those airways from blood spillage from the contralateral bleeding lung. In order for this maneuver to be effective the bleeding site must be known. The airway anatomy makes selective intubation of the right main stem bronchus easier compared to the left. However, right main stem intubation often leads to obstruction of the upper lobe bronchus and resultant lobar collapse. Substantial experience in this procedure is required. Double-lumen endotracheal tubes, designed for the selective intubation of either the right or left main stem bronchus, have also been used to protect the non-bleeding lung from blood spillover.

However, the use of these tubes mandates an experienced operator as numerous drawbacks are described. These include difficulty in placement and ease of misplacement during patient positional changes as well as their smaller intra-luminal diameter which could predispose to blood clotting or prohibit the future passage of a bronchoscope. During the acute management of massive hemothorax both a CT scan and bronchoscopy may localize the site of hemorrhage; however, these options fall secondary to airway control in an unstable patient. Bronchoscopy carries the additional benefit of having some interventional capability through the placement of a balloon catheter, via direct instillation of vasoactive drug into the bleeding bronchus (epinephrine diluted at 1:20,000), or through electrocautery or cryo-therapeutic options. For these reasons, bronchoscopy should be considered urgently after intubation. Since approximately 90% of all episodes of massive hemothorax arise from the bronchial artery circulation, bronchial artery angiography and embolization is also a reasonable intervention which could be employed to stop the hemothorax but this should be considered after the airway is secured. Finally, patients with massive hemothorax are at risk of severe hemorrhage and exsanguination, though this is rare. Immediate transfusion should be considered as an initial measure in any patient who is hemodynamically unstable.

The patient underwent immediate endotracheal intubation in the emergency department. A chest radiograph is shown in Figure 1 demonstrating the presence of an endotracheal tube as well as dense opacities mainly present in the right lower and middle lobes. In addition, there are patchy opacities in the left mid and lower lung zones. Shortly after intubation, fiberoptic bronchoscopy was performed but was generally unremarkable with the exception of bright red blood in the right middle and lower lobes with slow continued bleeding observed from these areas.

Answer question No. 2
The patient is currently being treated for active tuberculosis after a recent diagnosis. Although a vast array of diseases can produce massive hemothorax, tuberculosis is the most likely cause in this patient.
The above described patient is an immigrant from Ethiopia, a country with a high prevalence of tuberculosis. While tuberculosis status was known in this case, physicians should have a high index of suspicion for tuberculosis when caring for patients with massive hemoptysis from countries with a high prevalence of this disease. In fact, tuberculosis remains a leading cause of hemoptysis in these countries. The other listed options less frequently cause massive hemoptysis but are important considerations. The evaluation of any patient with hemoptysis requires initial exclusion of a nasopharyngeal or gastrointestinal source of bleeding, sometimes confused with true hemoptysis. The above patient had no evidence of such from history or on physical exam. Wegener's granulomatosis, as well as other immunologic based diseases such as Goodpasture's syndrome and systemic lupus erythematosus, may produce massive hemoptysis. Rather than hemoptysis arising from an airway-based lesion, these vasculitides often produce an alveolar capillaritis leading to a diffuse alveolar hemorrhage syndrome, not often associated with massive hemoptysis. The presence of a skin rash or hematuria might be clues to the presence of Wegener's granulomatosis. Pulmonary embolus usually produces lower volume hemoptysis, but this can evolve into massive hemoptysis in the setting of thrombolytic use. Finally, bronchogenic carcinoma is an infrequent cause of massive hemoptysis. However, it frequently causes lower volume hemoptysis. Although the above patient is a smoker and carries a lung cancer risk, the absence of an airway lesion on bronchoscopy combined with history of tuberculosis makes this diagnosis less likely.

Tuberculosis, bronchiectasis and lung abscess likely accounted for the great majority of US hemoptysis cases in the past. However, more contemporary evidence suggests the frequency of these diseases has significantly decreased. For example, a US-based study of predominantly non-massive hemoptysis demonstrated the top etiologies as bronchitis (26%), lung cancer (23%), pneumonia (10%) and tuberculosis (8%). Another US-based study demonstrated bronchiectasis (25%), lung cancer (16%), tuberculosis (12%) and aspergillus (12%) as the leading causes of hemoptysis. Furthermore, the volume of blood expectorated can narrow the differential diagnosis. For instance, when the hemoptysis is in large volumes, bronchiectasis and bleeding disorders are the more likely culprits as compared to lower volume hemoptysis where lung cancer and bronchitis are more frequently responsible. Two studies of massive hemoptysis in Africa, where there is a higher prevalence of tuberculosis, demonstrated tuberculosis as the leading cause of hemoptysis, with bronchiectasis and necrotizing pneumonia as other common contributors. Table 1 lists a few of the many causes of massive hemoptysis reviewed in more detail elsewhere.

**Table 1: Causes of Massive Hemoptysis**

<table>
<thead>
<tr>
<th>Frequent Causes</th>
<th>Infrequent Causes</th>
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</thead>
<tbody>
<tr>
<td>Tuberculosis</td>
<td>Pulmonary AVM</td>
</tr>
<tr>
<td>Bronchiectasis</td>
<td>Lung cancer</td>
</tr>
<tr>
<td>Lung Abscess</td>
<td>Pulmonary emboli</td>
</tr>
<tr>
<td>Myeloma</td>
<td>Mitral stenosis</td>
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<tr>
<td>Bleeding diathesis</td>
<td>Immunologic based lung disease SLE</td>
</tr>
<tr>
<td></td>
<td>Goodpasture's syndrome</td>
</tr>
</tbody>
</table>

Immediate bronchial artery embolization of the right lower lobe was attempted without successful resolution of the bleeding. To better define the anatomy and source of bleeding, a pulmonary CT angiogram was obtained (Figures 2, 3).

**Answer question No. 3**

The pulmonary CT-angiogram demonstrates a right 11 x 7 mm aneurysm (Figure 2, arrow) adjacent to a lower lobe cavity. There is also evidence of dense right lower lobe consolidation as well as consolidation and cavitary disease in the left mid and lower lung zones. A reformatted coronal image shows the aneurysm (Figure 3, arrow) as part of the pulmonary arterial circulation. Solitary pulmonary artery aneurysms are rare, with their etiology including trauma, infection, congenital and acquired pulmonary vascular anomalies, and pulmonary hypertension. When a destructive pathology occurs in the lung and erodes tissues tangentially across a pulmonary arterial vessel wall, the vessel media is destroyed, resulting in the protrusion of the thickened intima and an aneurysm. When pulmonary tuberculosis serves as the etiology of this destructive process, the aneurysm carries the eponym "Rasmussen's aneurysm". These aneurysms are often distributed peripherally, beyond the main pulmonary arteries and large branches. The other answers are not consistent with this CT scan.

Tuberculosis can cause hemoptysis through several
Mechanisms. During active disease, areas of cavitary and/or noncavitary tissue destruction can be associated with bleeding in varied amounts. The rupture of a Rasmussen’s aneurysm, as described above, is a well-known cause of massive hemoptysis. Areas of bronchiectasis, left from prior active disease, can also serve as sources of hemoptysis. Finally, an area of resolved pneumonitis from prior disease can evolve into a scar carcinoma and serve as a focus of bleeding.

The optimal management of massive hemoptysis in terms of definitive treatment is currently debated. Historically, surgical resection served as the definitive management for patients with massive hemoptysis, particularly when lateralized. Early consultation with a thoracic surgeon should remain a high priority when managing these patients. Although morbidity and mortality have been reported to be greater with emergent surgery for massive hemoptysis, as compared with stabilization and later elective surgery, more contemporary reports indicate urgent surgery is safe and lifesaving. More recently, angiographic detection and endovascular treatment has arisen as a separate and less invasive option. Reports indicate that this is a safe and effective treatment alternative to surgery. However, re-bleeding is reported in a significant minority especially in cases of chronic tuberculosis, mycetoma, and cancer. The most devastating complication of this procedure is the inadvertent embolization of a spinal artery leading to ischemic myelopathy. Fortunately, this is an uncommon complication with experienced arteriographers.
Promising Results of Roflumilast Treatment for some Patients with COPD

Two articles published in recent COPD special edition of The Lancet report that the drug roflumilast improves lung function and reduces exacerbations in patients with chronic obstructive pulmonary disease (COPD) who have chronic respiratory symptoms and are at greater risk of exacerbations. Roflumilast is an oral, once a day anti-inflammatory agent. The effect of this drug persists even when it is added to conventional treatment with inhaled long-acting bronchodilators. Therefore, roflumilast therapy could potentially become an essential treatment for these patients.

A key factor in the progress of COPD is chronic inflammation. Current treatment options avoid the clinical symptoms of COPD. But they have little effect on the underlying inflammatory processes linked with COPD. Furthermore, they do not stop the progression of the disease. Roflumilast belongs to a new class of anti-inflammatory drugs called phosphodiesterase 4 (PDE4) inhibitors. Earlier studies have proven that it can improve lung function and reduce the rate of exacerbations in some patients with moderate-to-severe COPD.

Leonardo Fabbri from the University of Modena and Reggio Emilia, Modena, Italy, and Klaus Rabe from Leiden University Medical Centre, Netherlands and colleagues set out to further investigate the potential of this new therapeutic strategy. They report the results of four randomised trials to examine the use of roflumilast in different subsets of patients with COPD. Leonardo Fabbri and his team conducted two trials with identical design in two different populations. They investigated whether roflumilast would improve lung function and reduce the number of exacerbations requiring treatment with corticosteroids in patients with severe to very severe COPD who had symptoms of chronic bronchitis and a history of exacerbations. A total of 1,537 patients were randomly assigned to oral roflumilast and 1,554 to placebo, for a period of one year.

In general, roflumilast improved lung function and reduced the frequency of exacerbations. The effect persisted regardless of the patient’s smoking status and use of other medication, such as long-acting β2 agonists. Lung function is determined by the forced expiratory volume (FEV1) in one second and the greatest volume of air that can be breathed out in the first second of a large breath. It increased by 48mL in the roflumilast group compared with placebo. The rate of exacerbations that were moderate or severe per patient per year was 17 percent lower in the roflumilast treated group compared to the placebo group. On the other hand, adverse events were more frequent in patients treated with roflumilast (67 percent) than with placebo (62 percent).

The authors explain: "These results suggest that different subsets of patients exist within the broad range of COPD and that targeted specific therapies could improve disease management."

Klaus Rabe and collaborators conducted two trials. They assessed whether roflumilast has a favorable effect when added to standard treatment with long-acting bronchodilators (β2 agonist salmeterol and the inhaled antimuscarinic tiotropium). A total of 1,677 patients older than 40 years participated. They all had moderate-to-severe COPD and were randomly assigned to oral roflumilast or placebo once a day for 24 weeks in addition to salmeterol or tiotropium. Results indicated that roflumilast added improvement in lung function in patients already receiving salmeterol or tiotropium. Roflumilast consistently improved the average FEV1 by 49mL in patients treated with salmeterol, and 80mL in patients given tiotropium, compared with placebo. Also, roflumilast improved respiratory symptoms. However, it was linked with more adverse events including nausea, diarrhea, and weight loss.

In view of the findings, the authors suggest that roflumilast could turn into an essential treatment in patients with moderate-to-severe COPD who are already being treated with long-acting bronchodilators.
Cardioprotective Diet
- Eat a diet in which:
  - Total fat intake is 30% or less of total energy intake
  - Saturated fats are 10% or less of total energy intake
  - Dietary cholesterol is less than 300mg/day
  - Saturated fats are replaced by monounsaturated and polyunsaturated fats.
- Eat at least:
  - Five portions of fruit and vegetables per day
  - Two portions of fish per week, including a portion of oily fish.
- Pregnant women should limit their intake of oily fish to two portions a week.
- Recommend looking at [www.eatwell.gov.uk/healthydiet](http://www.eatwell.gov.uk/healthydiet) and [www.5aday.nhs.uk](http://www.5aday.nhs.uk) for advice on healthy eating and portion size.
- Do not routinely recommend omega-3 fatty acid supplements or plant sterols and stanols for primary prevention.

Physical activity
- Take 30 minutes of at least moderate intensity exercise a day at least 5 days a week.
- Encourage people who cannot manage this to exercise at their maximum safe capacity.
- Recommend exercise that can be incorporated into everyday life, such as brisk walking, swimming and cycling.
- Exercise can be done in bouts of 10 minutes or more throughout the day.
- Take into account the person's needs, preferences and circumstances.
- Agree goals and provide written information about the benefits of activity and local opportunities to be active.

Weight management
- People who are overweight or obese should work towards achieving and maintaining a healthy weight.

Alcohol consumption
- Limit your alcohol intake to 34 units a day.
- Women should limit their alcohol intake to 23 units a day.
- Avoid binge drinking.

Smoking cessation
- Advise all people who smoke to stop.
- If people want to stop:
  - Offer support and advice
  - Offer referral to an intensive support service.
  - If they do not or cannot take up the referral for intensive support, offer pharmacotherapy in line
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Link the conclusion with the goals of the study but avoid unqualified statements and conclusions not completely supported by the data. In particular, authors should avoid making statements on economic benefits and analyses.

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