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Major Lower Limb Amputations: Experience of a Tertiary Care Hospital in Pakistan

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Abstract

Limb amputation results in great physical and psychological harm to the patient, causing immense stress and financial losses to the individual as well as his family, but still the procedure is performed in cases of dead and deadly limbs to save life of patient. A retrospective analysis of patients undergoing major lower limb amputations in Surgical Unit II, Services Hospital, Lahore from Jan 2014 to Dec 2017 was done. A total of 123 major lower limb amputations were done, 57% done in males, 61% were above knee amputations and 87% of patients lost their limb due to diabetic complications. Further measures should be taken to avoid this dreaded procedure in developing countries like Pakistan.

Introduction

Amputation" derived from the Latin word "amputate "(to excise, to cut out) has been defined as the "removal of part or all of a body part enclosed by skin" [1]. Amputations have been documented since ancient times. It has been practiced since the start of recorded history for various reasons [2]. Although considered to be a failure this procedure is usually performed as a last resort to attempt to preserve life. It is usually indicated in dead, deadly or useless limb. The documented incidence of amputation ranges from 3 to 44 per 100,000 people [3,4]. Amputation results not only in great physical and psychological harm to the patient but also restricts the movement of the individual thereby causing immense stress and financial loss. The loss of the limb is borne not just by the patients but their families and society as well, who are often times not well equipped to handle such a situation particularly in a country like Pakistan where guidance and resources to manage patients after amputations are non-existent [5-8].

Lower limb amputations are classified into various types depending on level of amputation. ICD-10 criteria categorize amputation into below-knee, above-knee, through knee, hip disarticulation, and hindquarter amputations as major lower limb amputations. The underlying cause for amputation varies in different regions. In developed countries it is more likely seen in older age patients presenting with peripheral vascular disease whereas infective and traumatic causes in middle aged patients are more likely in underdeveloped countries.[9] Through this study we aimed to document the frequent conditions resulting in lower limb amputations at our unit.

Material and Methodology

All the patients who underwent major lower limb amputations at our unit (surgical unit 2, Services Hospital, Lahore) from January 2014 to December 2017 were included in the study. Major amputations were identified according to ICD-10 criteria. Retrospective analysis was done. Type of the amputation, indication for the amputation, gender and age of the patients were noted. All statistical analysis was done using SPSS version 20.

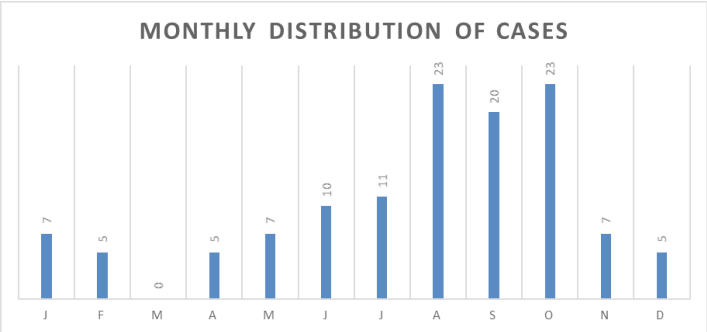
Results

There was a total of 123 amputations. 70 patients (56.91%) were male while 53 (43.09%) were female. 48 (39.02%) below knee amputations were performed while above knee amputations were 75 (60.985). Amputations were most commonly performed in the 4th and 5th decade of life. 97(78.86%) of the amputees were between ages of 41 to 60. By far the most common cause for

amputation was diabetes mellitus. It claimed 107 (86.99%) limbs. Another peculiar trend which was noticed was that the majority of amputations were occurring during certain months. 77 (62.6%) of the 123 amputations were performed between months of July to October. This trend persisted over all three years of data collection. The exact cause for this trend needs investigation.

(Tables 1,2).

DISTRIBUTION BY GENDER (n = 123)		
MALE	70	56.91%
FEMALE	53	43.09%
DISTRIBUTION BY TYPE		
BELOW KNEE AMPUTATION	48	39.02%
ABOVE KNEE AMPUTATION	75	60.98%
DISTRIBUTION BY CAUSE		
DIABETIC LIMB	107	86.99%
ISCHAEMIA	6	5%
TRAUMATIC	2	1%
INFECTIVE	5	4%
Others	3	3.01%



RELATION OF AGE WITH AMPUTATIONS.

	DIABETIC PATIENTS		NON-DIABETIC PATIENTS	
0-20	0	0%	2	12.5%
21-40	1	0.9%	2	12.5%
41-60	87	81.3%	10	62.5%
60+	19	17.7%	2	12.5%
	107		16	

Tables 1, 2: Results are summarized in tables.

Discussion

Amputation is a dreaded procedure. It is performed by commonly by orthopedic, general, vascular and trauma surgeons for various therapeutic reasons. The consequences of the procedure for the individual, family and society are immense. There are often profound psychological, economic, and social consequences. The underlying cause varies. The purpose of our study to identify the main indications for major lower limb amputations in patients presenting to us. In our study amputation was more common in men. Similar findings were also seen in other studies [1,9,10]. We noted a very high incidence of amputation in their 4th & 5th decades of life which is also collaborated by other studies [11,12]. The most common cause of amputation being diabetic limb. Other investigators have also provided similar results, with the risk of amputation being documented to be increased up to 15-fold in diabetics [1,9-11].

We also found a staggering of amputations during the months from July to October. We were unable to find any cause of this. After an extensive review we found that Leung has also reported an increased incidence of amputations during warm and humid months.[13] Perhaps this is the cause of this finding, however, this aspect needs further investigation. With increasing westernization of diet and a sedentary lifestyle diabetes is becoming increasing common in our population. Diabetes causes increased levels of blood glucose which cause damage to the blood vessels and nerves. Atherosclerosis of major vessels, atherosclerosis of minor vessels and neuropathy occur together. Weight bearing areas are most prone to problems as a result of this combination. Increasing age and long-standing diabetes both increase morbidity and mortality in such patients. Foot ulcers affect one in ten diabetics during their lifetime. A lack of knowledge and due to poor health practices diabetic ulcers are common in diabetic patients in our country. Delay in presentation and often inadequate healthcare services mean that the incidence of amputations in our country tends to be higher than the developed world. A number of classification methods have been proposed most commonly used of which are Wagner- Meggitt classification, The University of Texas system and PEDIS classification.

As per International Diabetes Federation (IDF) has individuals with diabetes is expected to rise from 382 million in 2013 to 592 million in 20352. Pakistan is among the top ten countries with diabetic population. 9.3% males and 11.1% females suffer from DM while other surveys showed slightly higher proportions4. DM

Disease and its complications cause significant morbidity and mortality resulting in mammoth economic burden to individuals, families, health system and of course nations.

Conclusion

On the basis of these results it is believed that a lot more local studies should be done to further elaborate this problem and highlight this issue. Losing limb and years of life due to a manageable disease is saddening and preventable. Our results we believe are just the tip of the iceberg. Furthermore, there seems to be association with warm and humid temperatures.

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