

Spectrum of Lower Limb Amputation in General Surgical Department of Allama Iqbal Memorial Teaching Hospital, Sialkot

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ABSTARCT

Aim: To assess the spectrum of lower limb amputation in general surgery as regards its etiology and levels of amputation.

Study Design: Prospective study.

Place & duration of study: Department of General Surgery, Khawaja Muhammad Safdar Medical College, Sialkot; from March 2015 to April 2018.

Methods: All patients undergoing amputations of lower limb irrespective of age and sex were enrolled admitted in surgical department with varied indications for amputations. Data of 195 patients was collected from March 2015 to April 2018. Patients were distributed in two groups. Group I- Minor amputations and Group II- Major Amputations. Results of treatment were assessed by regular follow up. Data of only those patients was included who could complete follow up for at least 3 months after surgery. Results were analysed using SPSS v22.

Results: In our study no of patients having minor amputation are 159 in which amputation due to diabetic infections are 122, necrotizing fasciitis 0, peripheral vascular disease is 20, crushing injuries 15, vascular injuries 2, malignant tumour 0. no of patients having major amputation are 36 in which due to diabetic infections are 14, necrotizing fasciitis 7, peripheral vascular disease 3, crushing injuries 6, vascular injuries 3, malignant tumors 3. No of patients having minor amputation are 159 in which those having amputation of single toe are 111, amputation of 2 or more toes are 39, forefoot amputation 9.

Conclusion: Amputations of lower limb are being done frequently in a surgical set up. There are varied indications for minor and major amputations.

Keywords: Amputation, Major, Minor.

INTRODUCTION

Amputation is intentional surgical removal of limb or body part done to remove the damaged tissue or to relieve the pain of patient. Due to amputation people lose their independence and due to it people cannot move freely. A multiple causes are reported like malignancy, peripheral vascular disease, trauma, diabetes mellitus¹. Diabetic foot are leading causes of amputations in diabetic patients. Amputation has very damaging effects on both physical and physiological health of people because it change body form render people less mobile, due to this people suffer a lot of problems. Those people who have diabetes undergo lower limb amputation than non diabetic because of hyperglycemia. So the incidence of lower limb amputation in diabetic patients is more than non diabetic². Mostly people with lower limb amputation have different co morbidities that include motivational impairments, cognitive impairment that effect progress of rehabilitation process. Lower limb Amputation can be divided into .major amputations and minor amputations. Major amputation include above knee amputation (transfemoral), below knee amputation (transtibial), at the hip (hip disarticulation), at the knee (knee disarticulation). Minor amputation include amputation at the ankle (ankle disarticulation), rays amputation².

Rehabilitation of persons with lower limb amputation is a complex endeavor that requires the consideration of variable factors. Rehabilitation of persons having lower limb amputation

poses different challenges than persons having amputation due to congenital loss .those who experienced amputation in childhood due to congenital loss begin coping with their impairment earlier than having amputation in adulthood⁴. This adaptation is more successful in healthier active young patients. It is important that rehabilitation services are provided to patients in best optimal way. The medical funding system should be such that it should allocate resources optimally to maximize the patient care^{5,6}.

It is important that, rehabilitation. services are used efficiently to maximize patient. abilities while demonstrating. financial responsibility and. sustainability. The ability to, predict length of stay (LOS) and the extent, of care patients. may be a valuable. tool in resource, management and. Ensuring financial .sustainability^{7,8}. Recent technological advancements helped patients with lower limb amputation with more functional and less activity limiting artificial wheel chairs. Despite the too much progress in the field, there is still a gap between functional leg and prosthesis⁹. Before any patient get fitted for a prosthesis, he must go through physical therapy to gain strength and range of motion, and occupational therapy to learn how to adapt to daily living tasks without prosthesis, this gives wound time to heal, and for a swelling to go down. Healthy traumatized patients are fitted for prostheses within 4 to 6 weeks while diabetic patients takes longer for healing, typically 6 to 8 weeks^{9,10}. Since no research has been conduct about this topic in this setup so we conduct this study.

PATIENTS & METHODS

All patients undergoing amputations of lower limb irrespective of age and sex were enrolled admitted in surgical department with varied indications for amputations. Data of 195 patients was collected from March 2015 to April 2018. Patients were distributed in two groups. Group I- Minor amputations and Group II- Major Amputations. Results of treatment were

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assessed by regular follow up. Data of only those patients was included who could complete follow up for at least 3 months after surgery. Major amputations were defined as removal of that much part of lower limb which is beyond limits of foot and the disability could be managed only by the use of prosthetic application; while minor amputations were defined as removal of a part of foot that is compatible with normal walk and no definite prosthetic application is mandatory. Results were analysed using SPSS.

RESULTS

General information of patients is shown in table I. Table II shows nature of etiologies and indications of amputations. Table III- Procedures carried out. The leading cause of the trauma was violence followed by traffic accidents,

Table I: General Data

Total no of patients in Study	195	100%
Age	12- 47 yrs	Mean age 37+ 8 years
Male: female	80: 115	1:1.47
Group I-	159	81.53%
Group II-	36	18.46%

Table II – Etiology- Lower limb amputations

	Group I-	Group II
Diabetic Infections	122(76.72%)	14(38.88%)
Necrotizing fasciitis	0	7 (19.44%)
Peripheral vascular disease	20(12.57%)	3(8.33%)
Crushing injuries of lower limb	15(9.43%)	6(16.66%)
Vascular injuries	2(0.25%)	3(8.33%)
Malignant tumours	0	3(8.33%)

Table III- Procedures done

	Group I-	
Amputation of Single toe	111	69.81%
Amputation of 2 or more toes	39	24.52%
Forefoot amputation	9	05.66%
Group I I- Major Amputations- 36(100%)		
Below knee amputation	28	77.77%
Above knee amputation	6	16.66%
Disarticulation of hip joint	2	05.55%

DISCUSSION

Our study showed that 69% of Group I- minor amputations were of single toe, while they were 63% according to the study by Resnick et al¹¹.

Our data presented that in Group I, amputations of 2 or more toes were 24%, while Trautner et al¹² gave a percentage figure of 28% in their data.

We observed that the forefoot amputations were 5% of total minor amputations in our study, while study of Kohler et al¹³ showed them to be 4%.

Below knee amputations were 77% of total Group II- major amputations according to our study, while Dawes et al¹⁴ showed below knee amputations to be 65% in their study. 16% of major amputations were above knee amputations according to our research, while 17% amputations were above knee according to the study by College of Occupational Therapists¹⁵. Feinglass et al¹⁶ presented in their study that

Disarticulation of hip joint was 2%, while it was 5% of all major amputations according to our study.

CONCLUSION

Amputations of lower limb are being done frequently in a surgical set up. There are varied indications for minor and major amputations. The spectrum of complications depend mainly on the underlying pathology and postoperative care.

Conflict of interests: No conflict of interests to be declared

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