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STUDY TO KNOW THE CURRENT MANIFESTATIONS FOR SIGNIFICANT LOWER LIMB AMPUTATIONS

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Abstract:

Objective: *To know the current indications for a significant amputation of the lower limb in a tertiary care configuration.*

Study design: *A Case series.*

Place and Duration: *In the North Surgery Department of Mayo Hospital Lahore in Collaboration with Orthopedic department for Six months duration from July 2018 to December 2018.*

Methodology: *We reviewed case reports of all patients with marked lower extremity amputation for six months. The main outcome measures were the patient's gender, age, amputation indicator, affected extremity, procedure, complications, outcome and hospitalization.*

Results: *Overall, fifty three cases had a major lower limb amputation with 47.49 mean age. The diabetes mellitus complications were the major cause of lower limb amputation in (54.7%) 29 patients and trauma in 22 patients (44.93%). The usual pre-established methods in 26 patients (49%) was debridement, skin grafts in four (7.5%) and one patient (1.9%) vascular repair done. The mean hospital stay was 17.3 days, ranging from 8 to 33 days. One patient (1.9%) died in the hospital due to sepsis.*

Conclusion: *The main complications of a limb amputation were complications of diabetes followed by trauma.*

Key Words: *Trauma, amputation, indication, diabetes.*

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INTRODUCTION:

Limb amputations have been performed for a long time. The first surgical explanation of the amputation of the leg was performed by Hippocrates (460 open 377 aC). Although the prosthesis was not included in the medical literature of ancient times, it was made and used as it was learned in books and non-medical images[2]. The limb amputation usually has profound economic, psychological and social effects on the patient's family and himself[3].

However, in most cases, amputation of limb is the only available option to secure the life of a patient. The manifestations for amputations of lower limb are generally considered to be three D: dead, fatal and deadly[4]. For lower limb extremity amputation, Common indications are different in various parts of the world, but are often diabetes mellitus complications, peripheral vascular diseases and traumas. In developed countries, most amputations over 60 years are of lower extremity in 80-90% of cases done because of vascular problems[5]. However, in under developed countries such as Pakistan, the main reason of a limb amputation continues to be the diabetes mellitus complications[6]. This study was performed to know the indications of large extremity amputations at a tertiary care hospital.

MATERIALS AND METHODS:

During the case series study period, we examined the notes of all cases with major lower extremity amputation admitted in North Surgery Department of Mayo Hospital Lahore in Collaboration with Orthopedic department for Six months duration from July 2018 to December 2018.. The main results measured were the patient's gender, age, indication of amputation, affected extremity, procedure, complications, outcome and hospital stay.

RESULTS:

53 total patients had major amputations of the limbs during the study. The mean age ± standard deviation of the patient was 48.09 ± 13.30. Men are more likely than women (Table I).

Table I. Demography of patients

Variable	Number
Age (Mean ± SD)	47.49 ± 13.20 Years
Gender	
Male	46 (86.8%)
Female	7 (13.2%)
Side of limb	
Right	33 (62.3%)
Left	20 (37.7%)

In 29 patients (54.7%), diabetes mellitus complications were the usual cause of limb amputation and trauma in 22 patients (44.93%) (Table II).

Table II. Indications of amputations

Indications	No. (%)
Complication of Diabetes	29 (54.7)
Trauma	22 (45.3)
Acute Vascular Event	2 (5.7)
Burns	1 (1.9)

In 26 patients (26%), most common procedures were debridement and skin grafts (26%) in 26 patients and in one patient (1.9), vascular repair was done. During hospitalization complications are shown in Table III.

Table III. Complicatins during stay and Outcome of patients

Complications	No. (%)
Wound Infection	19 (35.8)
Wound Hematoma	4 (7.5)
Stump necrosis	2 (1.9)
Outcome	**No. (%)**
Discharge	32 (60.4)
Referred	19 (35.8)
Left Against Medical Advice	1 (1.9)
Expired	1 (1.9)

The mean hospital stay was 17.3 days between 8 and 33 days. A diabetic patient died in the hospital due to sepsis. The results of all patients are shown in Table III.

DISCUSSION:

Amputation is still often considered a treatment failure. The responsibility for performing an amputation usually falls to the youngest member of the surgical team. Whatever the cause of a limb amputation, it must not be considered as treatment failure[7]. Amputation may be the preferred treatment for severe vascular diseases, tumors and trauma[8-10]. The amputation procedure usually takes place after all other methods are failed. For ten years, Mayfield had done 45.08% of amputations by general surgeons, vascular surgeons 33.09%, orthopedic surgeons 16.2%, 4.2% of pediatricians and 1.7% of other specialties[10-11]. Three-fourths of surgeons were assistants. Although by general surgeons, the amputations performed was reduced after 10 years while other specialists in the operation remained quite constant. This study highlights the sepsis of the diabetic foot as the main indicator of a limb amputation. Unluckily, most patients appear to be delayed when gangrene is common, limb recovery and revascularization is not a viable option[12]. The lower limb amputation risk in diabetic patients increases up to 15 times. Factors contributing to this include motor neuropathy, sensory neuropathy causing deformity and gait abnormalities; abnormal blood flow occurs due to autonomic neuropathy; ischemia due to macrovascular diseases; increased risk of infection due to Poor glycemic control. Limb infection and incorrect care of the ulceration is also a factor that increases the limb amputation. A study from Nigeria showed that diabetes accounted for 26% of cases and 26.5% for a Kenyan study. Approximately half of patients requiring amputation will require limb amputation within five years. People with diabetes mellitus have a higher preoperative death rate[13]. This analysis did not show this high mortality trend, mainly because most patients were sent medical service for blood sugar control after amputation.

In this study, trauma was the second indication of lower extremity amputation. The vast numbers of patients were referred from remote areas of the country; this was the only suitable option to save the patient's life because it was the cause of the amputation at the end of the presentation[12-14]. These extremities may heal with stabilization and revascularization of fractures, but it may fail. Various Nigerian studies have shown that trauma is the main cause of more than 70% of extremity amputations.

It should be eduacted that most of the amputations do not show any malfunction of the patient, healthcare provider or healthcare system. Amputation is often the inevitable cost of disease progression in the elderly[15]. In most cases, a small amputation gives a

successful result by quickly bringing a weak elderly person back to the patient's function.

CONCLUSION:

In our study, the complications of diabetes were the main indicator of amputation. It is necessary to increase the training and awareness of patients and all healthcare providers who are interested in providing appropriate services such as proper foot care and regular child care.

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