

Lower Limb Amputations in the Southern Part of Jordan

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Abstract

Objective: To determine the prevalence and causes of lower limb amputations in the southern part of Jordan.

Methods: The medical records of all patients with lower limb amputation who were followed up at Physical Medicine and Rehabilitation Clinic at Prince Ali Hospital in Karak province, between November 1998 and March 2006 were reviewed; age, sex, and causes of amputations were recorded.

Results: A total of (122) patients were studied, among which 87 men (71%) and 35 women (29%) were included, the mean age was 46 years. Trans-tibial amputation was the leading level (52%). The most common cause of amputation was DM (34%) followed by trauma (33%).

Conclusion: Diabetes Mellitus and trauma are the leading causes of lower limb amputation in the southern Part of Jordan. Programs intended to minimize the complications of these conditions and proper identification of high- risk patients should decrease the occurrence of amputations.

Keywords: Amputation, lower limb, prevalence.

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Introduction

Limb-fitting services started in Jordan with a small workshop adjoined to the Royal Medical Services (RMS) of Amman Military Hospital in 1968.¹

Nowadays, there are many workshops in the public and private sectors. In the public sector, there are two limb-fitting workshops, the Medical Rehabilitation Department at Al- Bashir Hospital in the Ministry of Health; and King Hussein Medical Centre at the Royal Rehabilitation centre.

In RMS, there are three prosthetic-orthotic clinics and workshops; in KHMC, at Prince Ali Hospital in Karak province, and at Prince Rashid Ben Al-Hussein Hospital in Irbid. The limb-fitting services in the RMS are being run by a team of physical medicine and rehabilitation doctors, prosthetics and physiotherapists.

The limb-fitting services at the RMS have progressed for many years in varying circumstances. The approach has been developed through constant observation and practical handily of many different types of patients; from

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the preoperative stage to discharge when the patient is fully mobile with prosthesis or a wheelchair or both, and long-term follow up. Limb amputation is a major disability that affects an increasing number of individuals. Improved function through rehabilitation must be the utmost goal in limb amputation. Diabetes, atherosclerosis obliterans, and trauma all are leading causes of limb loss. Programs intended to minimize the complications of these conditions and identify high-risk patients should decrease the occurrence of amputations.

Foot ulceration and amputation can be prevented by up to 78% with early identification and effective management. ²

The aim of this study was to increase understanding of the incidence and causes of limb amputation, in order to promote programs of prevention and improved quality of care to all persons with an increased risk of limb loss, and audits in detail the incidence, causes and levels of amputations in the southern part of Jordan.

Methods

The medical records of all patients with lower limb amputation, who were followed up at Physical Medicine and Rehabilitation Clinic at Prince Ali Hospital in Karak province, between November 1998 and March 2006 were reviewed; age, sex, and causes of amputations were recorded.

Results

The total number of patients included in this study was 122, 87(71%) being males, and 35 (29%) females, with age range from 10 to 80 years. The dominant age group was 61-70 years (36%) (table 1). The mean age was 46 years.

Trans-tibial amputation was the leading level; found in 64 (52%) patients; the second leading level was trans-femoral amputation which was found in 21 (17%) patients (table 2).

DM was the commonest cause of lower limb amputations, appeared in 42 (34%); followed by trauma, which was noticed in 40 (33%) of patients (table 3).

Among all traumatic amputees, 14 (35%) were due to mine blast injuries, and 11 (28%) due to road traffic accidents.

Table (1): Age Group Frequencies and Percentages of Amputees.

Age group	Frequency	Percentage %
1 - 10	1	1
11 - 20	3	2
21 - 30	11	9
31 - 40	15	11
41 - 50	12	10
51 - 60	29	24
61 - 70	44	36
71 - 80	9	7
Total	122	100

Table (2): Distribution of Amputation levels.

level of amputation	No.	%	Male	Female
1 Through Hip	2	2	0	2
2 Trans femoral	21	17	14	7
3 Through knee	4	3	3	1
4 Trans Tibial	64	52	40	14
5 Through ankle	15	12	11	4
6 Partial Foot amputation	12	10	7	5
7 Multiple	4	3	2	2
Total	122	100	37	35

Table 3: Causes of Amputation.

Cause of amputation	No of pts.	Percentage %	Male	Female
DM	42	34	30	12
Trauma	40	33	34	6
P.V.D	17	14	10	4
Tumor	13	11	5	8
Infection	4	3	3	1
Congenital	6	5	5	1
Total	122	100	87	35

Discussion

Amputations and limb-fitting services have received the interest of many authors worldwide.

Poljainen and Alaranta ³ conducted a two-year study in lower limb amputations in southern Finland.

They reported 880 amputations performed on 705 amputees. The trans-femoral was the dominant site of amputation, 42%, followed by the trans-tibial amputations, 28%.

Peripheral Vascular Disease (PVD) was the most common cause of amputation (43%) followed by diabetes mellitus (40%). Another study in southern Finland by laaperi et al. ⁴ reported 268 amputees over one year (1989) with mean age of 70 years. The PVD was the main cause of amputations, 79% (diabetic- vasculopathy, 43% and 36% arterio- sclerosis). Trans-femoral amputation was the most common, 49%, followed by the trans-tibial amputation, 29%.

In England, Rubin luff ⁵ reported from the Department of Health and Social Security (DHSS) data in 1986 that the trans-femoral amputation, formed the largest group, 47%, followed by the trans-tibial (45%) of the lower limb amputations performed in 1985.

An Arab study by Al-Turaiki and Al-Falali ⁶ from Saudi Arabia reported in a retrospective study over 14 years, 3210 amputees with the mean age of 30.5 years. The trans-tibial amputation was the majority (45.2%) followed by the trans-femoral (21.6%). Trauma was the leading cause of amputations (59.7%) followed by the disease (30%).

Another study from the Northern part of Jordan, ¹ reported 235 amputees over 3 years with the mean age of 38.6 years. The trans-tibial was the leading level of amputation (59.1%). The most common cause of amputation was trauma (51%) followed by DM (32.3%).

The exact number of amputations performed in Jordan is not known because of the manner in which health services are delivered. Surveys, estimates, and analyses of hospital records were reported by many in an attempt to gather complete data that may prove helpful to clinicians and researchers in their assessment, management, and treatment of amputees.

The ratio of below-knee (trans-tibial) to above knee (trans-femoral) amputees is increasing, thus throwing doubt on the trans-femoral amputations from disease-related problems. As medical and surgical techniques improved and perceptions changed, the decision to operate at the trans-tibial level from vascular disease increased.

The preservation of the joint, with its proprioceptive function and reduced energy expenditure in ambulation, especially for the elderly, the outcomes of survival and the successful use of a prosthetic device increased. ⁸ In our study, the prevalence of transtibial amputation is (52%), in contrast to transfemoral amputations which have been considered as (21%) and this prevalence is similar to that study which was reported from Saudi Arabia. ⁶

Glattly and Kay showed an increase in transtibial over any other level of amputations. ⁸

DM and trauma were the most frequent causes of amputations by Glattly and Kay, ⁸ this finding is similar to our Data.

Traumatic amputations due to road traffic accidents and mine blast explosion was the second main cause of amputation in our study in contrast to studies from England, Scotland and Australia, ^{8, 9} where the peripheral vascular disease was the leading cause of amputations.

(50%) of all nontraumatic lower-extremity amputations are performed in patients with diabetes. ¹⁰

Lower extremity amputation in patients without diabetes is almost exclusively performed as a result of PVD. ²

Conclusion

Diabetes mellitus and trauma are the leading causes of limb loss in Jordan. Programs intended to minimize the complications of these conditions and identify high risk patients should decrease the occurrence of amputations.

Trauma prevention is of greatest importance in children and adolescents. Programs offered directly to them in school and by social organizations should have a positive effect.

The data from this study indicates the demand for limb-fitting services and rehabilitation and forms a basic guideline for future development of prosthesis and orthotic services, and helps in the appropriate evaluation of the future needs in personal facilities and budgets.

References

1. Al-worikat AF. Lower limb amputation in north part of Jordan. Jordan Medical Journal 2003; 37(1): 59- 62.
2. Schofield CJ. Mortality and Hospitalization in Patients After Amputation. Diabetes Care 2006; 29: 2252- 2256.
3. Murdoch G. Amputation revisited. Prosthetics and orthotics international 1984; 8: 8- 15.
4. Narang IC, Jape VS. Retrospective study of 140400 civilian disabled (New) treated over 25 years at an artificial lime center. Prosthetics and orthotics international 1982; 6: 10- 16.
5. Esquenazi A, Vachvanukunkiet T, Torres M, Demopoulos JT. Characteristics of a current lower extremity amputee population: review of 919 cases. Arch phys Med Rehab 1984; 65: 623.
6. Al- Turaiki MH, AL-Falahi LA. Amputee population in the Kingdom of Saudi Arabia. Prosth and Orthot Int 1993; 17: 147- 156.
7. Glatly HW. A statistical study of 12,000 new amputees. South Med J 1984; 57: 1373- 1378.
8. Lec CS, Sariego J, Matsumoto T. Changing patterns in the predisposition for amputation of the lower extremities. AW surj 1992; 58: 474- 477.
9. National Center for Health Statistics: US Department of Health and Human Services. Current Estimates from the National Health interview survey, 1990.
10. Kapelrud H. Lower-limb amputations and diabetes, Tidsskr Nor Laegeforen. 2006; 7: 2261- 2263.

بتور الأطراف السفلى في جنوب الأردن

وائل عبد الرزاق الذنيبات، عبد الفتاح الوريكات، قسم التأهيل والطب الطبيعي، الخدمات الطبية الملكية، مدينة الحسين الطبية، عمان، الأردن.

الملخص

الهدف: معرفة عدد وأسباب بتور الأطراف السفلى في جنوب الأردن.

تمت هذه الدراسة في قسم تأهيل الأطراف الصطناعية في مستشفى الأمير علي بن الحسين في مدينة الكرك في الفترة الواقعة ما بين تشرين الثاني عام 1998 حتى شهر آذار عام 2006؛ وذلك بدراسة الملفات الخاصة بالمرضى. لقد كان هناك 122 مريضاً، منهم 87 ذكور و35 إناث، وكان المعدل العمري للمرضى 46 سنة.

كانت نسبة البتر تحت مستوى الركبة 52% وكان عدد البتور الناتجة عن مرض السكري ومضاعفاته 34%، أما الإصابات (حوادث الطرق وغيرها) فكانت نسبتها 33%.

تعطي هذه الدراسة فكرة عن الحاجة الماسة لوجود مركز أطراف إصطناعية في المنطقة الجنوبية، والعمل على إيجاد السبل الكفيلة بالوقاية من الحوادث والعلاج المبكر لمضاعفات مرضى السكري وكذلك وضع الميزانية المناسبة لتأهيل هذه الفئة من المرضى.

الكلمات الدالة: بتور الأطراف السفلى الشائعة.

