INDICATIONS OF LIMB AMPUTATION IN ZAMBIAN NEONATES

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Summary

A personal experience in the amputation of 27 limbs in 21 Zambian neonates has been presented. The indications for amputation have been eleborated. There were fewer immediate post-operative complications in the neonates than usually seen in adults. The importance of a timely decision to undertake surgery has been stressed; the difficulty in obtaining parental consent has been stated.

Introduction

One usually associates amputation of limbs, a mutilating procedure irrespective of its overiding medical indication, with adults. But a surgeon, especially involved with the practice of paediatric surgery, on occasions also has to undertake such procedures on children; a source of considerable agony not only to the affected parents but to the operating surgeon as well. The following account elaborates the author's personal experience in the amputation of 27 limbs in 21 indigenous Zambian neonates.

Materials and Methods

The materials consisted of 21 neonates undergoing amputation of one or more limbs, in the Paediatric Surgical Unit, University Teaching Hospital, Lusaka during a 5 year period (1979-1983). 10 patients were transferred from the neonatal unit of this hospital; the remaining 11 patients (52.38%) were referred from various hospitals outside Lusaka. The patients, included in this study, were less than one month old; the average age at operation was 7 days and 17 (80.95%) of the children were male.

Indications for amputation (Table)

The indications were classified into three main groups (Gillis, 1954) and are eleborated in the Table. The most important indication for amputation in this series was trauma secondary to road traffic accident, all the affected infants being passengers in motor vehicles. The injured limbs were either severely crushed or were considered dead limbs due to irreparable damage to the major blood vessels. A decision to amputate was undertaken in the belief that any attempt to salvage the limb would have endangered the infant's life. In this group of 8 patients 8 lower limbs and two upper limbs were amputated. The next important indication was congenital extra limbs (fig. 1); in 5 patients 7 extra limbs were disarticulated. There were also 3 cases of dry gangrene and one case od gas gangrene. The former condition followed intravenous fluid infusion in district hospitals. The circumstances leading to the development of gas gangrene in the left lower limb of a 6 day old baby boy remained unclear. Another 5 limbs (4 upper and 1 lower) of 3 neonates were amputated following severe (charred) burns. A lone patient had his lower limb amputated for chronic osteomyelitis.

Surgical Techniques and Mortality

All cases of congenital extra limbs were disarticulated. A thorough neurological examination and when deemed necessary an angiographic study was undertaken prior to disarticulation. In the case of (Tooms, 1971) lethal or dead limbs provisional amputation was performed initially. Of the 12 lower limb amputations, 9 were end-bearing and the remainig three were non-end bearing. Of the 9 upper limbs, 5 had below elbow and 4 had above elbow amputation. 3 patients (14.28%) died; all deaths appeared to have resulted from the effects of the primary disease, due to delay in undertaking amputation. The post-operative recovery in the remaining patients was remarkably uneventful. As a matter of fact the immediate post-operative complications were consirably less in the neonates compared to adult patients.

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Discussion

One needs considerable courage and experience to decide on amputating the limb of a neonate and the decision to be effective must also be timely. The importance of a timely decision assumes a much greater relevance, especially in patients with "dead" or "lethal" limbs; a delayed amputation in such cases is likely to defeat the whole purpose of this traumatic exercise. While an experienced surgeon can readily arrive at a decision to amputate, for the parents it is a far more difficult decision to arrive at. A consent, especially in this socio-economic background is seldom forthcoming. A sympathetic approach and objective relationship with the parents may ease this situation considerably but inspite of all efforts, the parents may withold consent for an amputation up to the very end. During the period of this study there were at least two cases where lives could have been saved had the parents agreed to amputation.

The situation, however, was reversed in 7 cases of congenital extra limbs; here the parents were overly in favour of an amputation and even expressed concern at the slightest delay in undertaking its removal.

As to the various pathological processes necessitating the removal of limbs in this series, the exact mechanism of the development of dry gangrene following intravenous infusion remains difficult to explain. Chronic osteomyelitis, an almost endemic disorder, in Zambia, is limited to children between the ages of 5 and 15 years and is rare below one month. The only case, where amputation of the lower limb was undertaken due to osteomyelitis, had complete bone destruction and associated septicaemia.

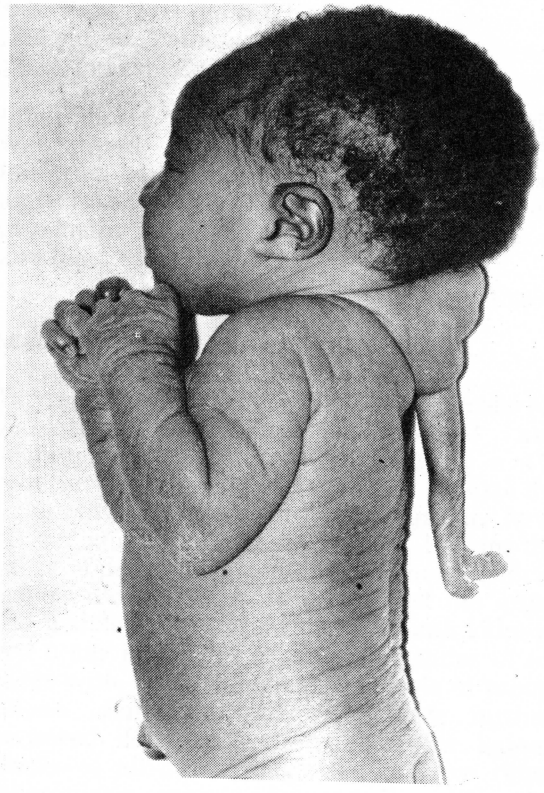

Fig. 1 A congenital extra upper limb. All 3 extra upper limbs were similar in location. All accessory lower limbs were attached to the lateral side of the hip joints.

TABLE

INDICATIONS FOR THE AMPUTATION OF 27 LIMBS

	Number of Neonates	Upper limbs	Lower limbs
Dead Limbs (not salvagable)			
a) Severe trauma (RTA)	8	2	8
b) Burns	3	4	1
c) Dry gangrene	3	2	1
d) Chronic osteomyelitis	1	0	1
Nuisance Limbs (ongenital extra limb)	5	4	3
Lethal Limbs (poses danger to the patients survival)	1	0	1
TOTAL	**21**	**12**	**15**

References

GILLIS, L. (1954).: Amputations.
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TOOMS, R.E. (1971).: Campbell's operative orthopaedics.
St. Louis: V.C. MOSBY CO., pages 838 — 900.