CASE REPORT

TRANSECTION OF THE POPLITEAL ARTERY WHILST TRAMPOLINING

J. P. R. WILLIAMS, MBE, FRCS

*Orthopaedic Registrar, Orthopaedic and Fracture Department,
Cardiff Royal Infirmary, Wales*

INTRODUCTION

Dislocation of the knee joint is a rare but serious injury due to considerable trauma. Damage to the popliteal artery is a well recognised complication but usually recovers following early reduction. Transection of the artery is very rare, but when present, early repair should be undertaken. A case is described to illustrate the management of such an injury.

CASE REPORT

A 24 year old West Indian woman was admitted as an emergency having suffered an injury to the right knee on landing awkwardly on a trampoline. She was a reasonably experienced club trampoliner and on admission there was an obvious dislocation of the right knee joint. The peripheral pulses were absent in the right foot and capillary return was sluggish. The anterior dislocation (Figs. 1 and 2) was reduced under intravenous Diazepam without difficulty, but there was very little improvement in the circulation to the foot. An arteriogram (Fig. 3) was immediately performed which showed a block in the popliteal artery at the adductor hiatus some 10 cms above the knee joint, although there was some "run off" indicating collateral circulation.

Exploratory operation was performed that afternoon and a complete transection of the popliteal artery found. The ends of the artery were trimmed back beyond the contused area and a segment of short saphenous vein used as a graft to bridge the gap. There was immediate good pulsation in the graft and improved circulation to the right foot.

Fig. 1: Anterior dislocation of right knee joint — A/P view.

Present address:

Senior Orthopaedic Registrar,
St. Mary's Hospital,
Praed Street,
London, W2

Fig. 2: Lateral view.

The patient was treated on a Thomas splint both for immobilisation and to watch the wound which was under some tension. After three weeks, she went into a plaster cylinder for a further four weeks. No ligament reconstruction was performed and when seen in the Orthopaedic Clinic nine weeks post injury, she had 110° of knee flexion and was walking happily without support. This was in spite of obvious lateral and antero-posterior instability on clinical examination. She is now back running and has a functionally stable knee, though she has not returned to trampolining because of fear following the original injury.

No post-operative arteriogram was performed as this was thought unnecessary in view of the excellent perfusion.

This case illustrated two interesting points:

1. Transection of the popliteal artery in a closed anterior

Fig. 3: Arteriogram showing blockage of popliteal artery.

dislocation of the knee joint.

2. Functional stability of the knee joint following non-operative intervention following rupture of at least three of the four main ligaments of the knee joint.

DISCUSSION

Circulatory insufficiency is a well recognised complication of dislocation of the knee joint. However, the most common cause is that of pressure on the popliteal artery which is usually relieved on reduction of the dislocation. Thrombosis and intimal tears are well documented but complete transection of the popliteal artery is rare. Popliteal artery damage is reported in 5-30% of cases of traumatic dislocation of the knee joint. It is particularly common in anterior dislocations (Kennedy, 1963). Early vascular repair should be completed within 6-8 hours (Green and Allen, 1977). Bloom et al (1976) described four amputations out of eleven injuries associated with popliteal artery damage, and Hyndman and Schweigel

(1975) described seven amputations out of eleven injuries.

The question of open repair of the ligaments versus closed manipulation is more open to debate.

O'Donoghue (1955) advocated repair of all ligaments where Mitchell (1930), Smillie (1962), Myles (1967) and Taylor et al (1972) claimed conservative treatment gave good results.

CONCLUSIONS

1. Immediate closed reduction should be performed.
2. Vascular status carefully watched.
3. Arteriography if indicated.
4. Early vascular graft.
5. Immobilisation for six weeks at the most.

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NOTICE

COMMITTEE OF ENQUIRY INTO SPORTS SPONSORSHIP THE HOWELL REPORT

Mr. Howell's Report was published on Thursday, 17th November, 1983 and contains a considerable amount of statistical information and some 73 Recommendations and Conclusions, many of which will be of great interest to governing bodies of sport and recreation and those members both indirectly and directly involved in sports and may well be of interest to personal members as well as clubs and associations.

Individual copies are available from the Central Council of Physical Recreation, Francis House, Francis Street, London SW1P 1DE at a cost of £25, including postage and packing but for those members who may not require a personal copy it is suggested that they ask their local Library to have a copy available which may again be ordered from the C.C.P.R.

David P. Chapman