

The Primary Management of Sports Injuries Occurring in a Ski Resort

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SUMMARY

Background - Sports injuries are very common, especially when seen in the context of a winter sports resort. With some injuries, there is a high morbidity, but most can be treated comprehensively in General Practice with the help of extended skills.

Aim - To evaluate the caseload of a typical General Practice in a Ski Resort, and to establish treatment possibilities.

Method - Attendance records of all patients were reviewed and evaluated.

Results - Sixty four per cent of attenders presented with trauma, of which, the vast majority (75%) had sustained ligamentous injury. Excluding those that had sustained complete rupture of the Anterior Cruciate Ligament (ACL), all of these had their treatment completed in Primary Care. Patients with fractures were also treated entirely at the Centre, except for those who needed hospitalisation.

Conclusion - In the right environment, General Practitioners are able to provide comprehensive treatment for significant sports injuries many of which would usually present at Casualty or Orthopaedic departments. This would appear to be a very cost-effective approach.

Keywords: ligamentous injury, physiotherapy, immediate care.

INTRODUCTION

Trauma occurring as a result of snow related sports is increasing in incidence because of the latter's popularity and availability. This paper is a retrospective study of attendances at a General Practice during a complete winter season, with discussion of treatment options and follow up.

Val D'Isere is a large winter sports resort in the Savoie region of France. The season lasts for five months from the beginning of December. Approximately 400,000 tourists are catered for, and the medical resources are composed of eight General Practitioners working from five independent Surgeries.

This study reports on the experience of a two doctor Practice situated in the centre of the village, at the base of the ski slopes. The surgery is open twelve hours daily from 0800 and the Medical staff are assisted by RGNs and Physiotherapists. There are two consulting rooms, an X-Ray/Treatment room and two physiotherapy rooms. Equipment includes an X-Ray machine, standard resuscitation and ultrasonic/interferential physiotherapy machines. Access to the Surgery is gained by ambulance, ski rescue or directly.

A triage system exists so that major trauma bypasses the village's facilities directly by helicopter to Regional Centres.

METHOD

The treatment, follow up and referral records of all attenders at the Centre during an entire winter season were collated. This was done manually by referring to the daily attendance sheets and summarising the individual treatment records.

RESULTS

During the study period, a total of 1815 new patients attended the Centre, of which 1070 presented with trauma.

Table 1: Trauma attendances (1156)

| | |
|--------------|--------------|
| Mean Age | : 29.8 years |
| Fractures | : 142 |
| Dislocations | : 23 |
| Ligamentous | : 867 |
| Head Injury | : 38 |

Lacerations : 84
Abdominal : 2

The abdominal trauma occurred in both snowboard-ers who walked in to the Centre. Both were referred to hospital because they became unstable. One had suffered a splenic haematoma and the other a renal haematoma. Neither needed surgery.

Following medical assessment, most injuries were X rayed, because of the twisting nature of the majority of ski accidents. Stress views were sometimes taken in the absence of bony injury to exclude ligament rupture.¹

Distribution of fractures is shown in Table 2. Speed bears very little correlation to the chance of sustaining a fracture and the majority occurred with simple falls, often in inexperienced skiers. One explanation for this where lower limb damage is concerned may be that the equipment failed to release on falling thereby exposing the limb to much greater torsional forces.¹

Table 2 : Fracture distribution

| | | | |
|--|-------|----------------|-----|
| UPPER LIMB | : 100 | LOWER LIMB | :35 |
| Clavicle | : 18 | Femur | : 1 |
| Scapula | : 1 | Tibial Plateau | : 5 |
| Humerus | : 15 | Anterior | |
| | | Tibial Spine | : 6 |
| Forearm | : 35 | Tibia,Fibula | :12 |
| Hand | : 31 | Ankle,Foot | :11 |
| Others : 7 (Ribs : 3, Nasal : 2, Zygoma : 1, Lumbar Spine : 1) | | | |

TREATMENT

Once a formal diagnosis had been made, uncomplicated ligamentous injuries were aggressively treated with ice, strapping, anti-inflammatories and physio-therapy,² acutely if appropriate. The latter consisted of ultrasound, interferential and also joint taping techniques to promote ligamentous repair by proprioceptor stimulation. There were 1175 allocated half hour physiotherapy sessions during the season.

Undisplaced fractures were immobilised in fibre-glass plaster, whilst simple displaced fractures and dislocations were reduced under regional anaesthesia and/or sedation. Those requiring in-patient management were stabilised and transferred to the nearest local facility, two hours away by ambulance.

The majority of accidents did not result in a bony injury. In this case, the aim was to get the patient fit enough as quickly as possible to resume their sporting holiday. Here daily physiotherapy was of most use.

Another pool of patients to whom regular physiotherapy was important, were 82 who sustained complete rupture of the ACL. Generally, this injury occurred at low speed, without involvement of other skiers. Significant rotation of the knee about a fixed foot, without ski release, resulted in acute, severe pain, and immediate instability. On presentation, Lachmann's test was positive in around seventy per cent acutely, and a significant effusion present in fifty per cent.³

Acute treatment was extremely pro-active, and consisted of daily physiotherapy, anti-inflammatories, bracing, and drainage of effusion, normally at seventy two hours.⁴ At the end of the holiday, the patient was given a referral letter and appointment to a knee clinic in NHS hospital in London. Here the patient was considered for ACL reconstruction.

Other Medical Centres in the resort tended to immobilise the joint in plaster prior to surgery. It has been the experience of our own surgical colleagues that acute pro-active treatment prepares the damaged knee and strengthens the surrounding supportive structures far better, allowing for less inter-operative morbidity and a more rapid post operative recovery.

DISCUSSION

In a ski resort, the majority of holidaymakers never injure themselves significantly enough to visit a doctor. Of those that do, most of them will want to resume their sporting activities rapidly. This is often made possible by regular physiotherapy and medical review. However, this does come at a cost, this is mainly borne by holiday insurance. As we enter the consumer era of healthcare and dilemmas of funding, this provides a good example of one form of provision of medical care.⁵

Acknowledgements

I would like to thank the Nursing and Physiotherapy staff who helped collect the data and Vicki Jones who aided in its preparation. The study received no funding.

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