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CASE REPORT

Concomitant ipsilateral subcapital and intertrochanteric fractures of the femur

R.J. Poulter^{*}, M.J. Ashworth*Department of Trauma and Orthopaedics, Torbay Hospital, South Devon, UK*

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Introduction

Both subcapital and intertrochanteric fractures of the femoral neck are common injuries in the geriatric population. Simultaneous ipsilateral fractures of the femoral neck are extremely uncommon. Till date, there have been only three ipsilateral fractures reported in the literature.^{1,2,4} Different methods of fixation have been reported; compression hip screws^{2,4} and bipolar hemiarthroplasty.¹ We report the use of a relatively new device that addresses the biomechanical aspects of both fracture types.

Case report

A 76-year old previously independently mobile lady fell sustaining an undisplaced slightly angulated subcapital fracture in association with a minimally displaced intertrochanteric fracture (*Fig. 1*).

A percutaneous compression plate (PCCP, Orthofix Ltd., Guildford, England) was inserted under image intensification (*Fig. 2*). Post-operatively she mobilized touch weight bearing for 6 weeks followed by 6 weeks partial weight bearing then full

weight bearing. There were no post-operative complications. Radiographs taken at 3 months are satisfactory with no signs of avascular necrosis. Four months after surgery, the lady is now fully weight bearing with no discomfort in the hip and a good range of movement.

Discussion

There have been three previous case reports documenting simultaneous ipsilateral subcapital and intertrochanteric fractures.

An et al.¹ described a four part intertrochanteric fracture in association with a displaced subcapital fracture, sustained from low-energy trauma. Because of the displaced subcapital fracture, a bipolar long stemmed hemiarthroplasty was used (to gain additional stability). Parham bands were also used to secure the intertrochanteric component, with good result.

Cohen and Rzetelny² report dynamic hip screw fixation for a minimally displaced subcapital and associated trochanteric fracture with a good result.

In both the above reports, the simultaneous fractures were only identified under fluoroscopic evaluation and not identified on the initial radiographs.

Isaacs and Lawrence⁴ documented injuries sustained from high-energy trauma. The patient sustained a Garden Type II subcapital fracture and

^{*} Corresponding author at: Department of Trauma and Orthopaedics, Torbay Hospital, Lawes Bridge, Torquay, Devon, TQ2 7AA, UK. Tel.: +44 1803 654793; fax: +44 1803 654519.

E-mail address: rob.poulter@nhs.net (R.J. Poulter).



Figure 1 Pre-operative radiograph, showing both subcapital and intertrochanteric fracture.

intertrochanteric fracture, complicated by associated pubic rami fractures. The fractures were treated with a compression screw and slide plate system. The patient recovered slowly secondary to other injuries sustained during the accident, and later died from complications not related to surgery.

Our case was treated with a PCCP device. The use of this plate was originally described by Gotfried³ for percutaneous compression plating of intertrochanteric fractures. In a prospective randomised trial comparing PCCP to CHS, Kosygan et al.⁵ showed similar outcomes with either technique. We chose the PCCP specifically because of the sliding nature of the screws in the barrel behav-



Figure 2 Intra-operative fluoroscopic image, showing position of PCCP.

ing like a D.H.S. (for the intertrochanteric element of the injury). The use of two screws confers rotational stability, which we believe to be particularly important for the subcapital element of this injury. The percutaneous nature of the surgery also allows quicker soft tissue recover from surgery, perhaps with less damage to the vascularity of the fracture fragments.

Our patient made an excellent recovery from this operation. We believe this device should be considered as capable of treating both elements of this unusual fracture combination.

References

1. An HS, Wojcieszek JM, Cooke RF, et al. Simultaneous ipsilateral intertrochanteric and subcapital fracture of the hip. *Orthopaedics* 1989;12:721–3.
2. Cohen I, Rzeteny V. Simultaneous ipsilateral pertrochanteric and subcapital fractures. *Orthopaedics* 1999;22(5):535–6.
3. Gotfried Y. Percutaneous compression plating of intertrochanteric hip fractures. *J Orthop Trauma* 1993;14(7):490–5.
4. Isaacs C, Lawrence B. Concomitant ipsilateral intertrochanteric and sub capital fracture of the hip. *J Orthop Trauma* 1993;7(2):146–8.
5. Kosygan KP, Mohan R, Newman RJ. The Gotfried percutaneous compression plate compared with the conventional classic hip screw for the fixation of intertrochanteric fractures of the hip. *J Bone Joint Surg Br* 2003;85-B:148.