

Spontaneous hip fractures

44/872 in a prospective study

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We assessed the relationship between the onset of pain and the fall in a consecutive series of 1,212 patients admitted to a single hospital with an acute hip fracture. 915 patients could be evaluated. The overall incidence of spontaneous fractures was 7%, but this fell to 5% if pathological fractures were excluded. The incidence of fractures without a fall was 6%.

2% of patients gave a history of pain for up to 8 weeks before the fall and only 2 of the patients gave a history of acute pain in the hip, causing them to fall. Physicians should be aware that a spontaneous hip fracture can occur without any history of trauma and such fractures are likely to be pathological or intracapsular.

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The term "spontaneous fracture" is widely used in the literature, yet it is rarely defined. In some papers, it includes pathological fractures and in others it may refer to patients with no history of trauma. However, some patients may fracture their hip before the fall. The classical history of such a spontaneous fracture is that of an elderly female who, whilst walking develops acute and severe pain in the groin, causing her to fall.

Previous reports on the incidence of "spontaneous" fracture have varied considerably, with figures of 1% (Alffram 1964), 3% (Horiuchi et al. 1988), 8% (Campbell 1976), 11% (Dias 1987) and 15% (Sloan and Holloway 1981). This study aims to determine in a large series of prospectively studied patients the current incidence of spontaneous fractures, to define the different types of spontaneous fracture and whether spontaneous fractures differ from other hip fractures.

Patients and methods

We prospectively studied 1,212 consecutive admissions to Peterborough District Hospital over the period 1992–1996. 297 patients were excluded from the analysis as they were unsure as regards the time of the fall and the onset of pain, in most cases because of mental impairment. In the remaining 915 cases, the relationship of pain in the hip to the occurrence of any fall and admission to hospital was enquired about.

A spontaneous fracture was defined as any case of a hip fracture without a history of a fall or with pain in that hip for up to 8 weeks before the fall. Acute pain refers to sudden pain, severe enough to make the pa-

tient seek immediate medical help. Chronic pain refers to pain in the hip for more than 8 weeks.

In all patients, the site of the fracture and the possible presence of tumor or Paget's disease of bone at the fracture site were noted. All patients were assessed by a mobility score (Parker and Palmer 1993), mental test score (Denham and Jefferys 1972), and ASA grade (American Society of Anesthesiologists 1963). The method of treatment, 30-day mortality and length of hospital stay were recorded for all patients.

Results

68 patients satisfied our definition of a spontaneous fracture, giving an incidence of 7%. 43 (5%) fractures were pathological of which 24 were spontaneous. If the pathological fractures are excluded, the incidence of spontaneous fractures is 44 of 872 (5%). Table 1 lists the different types of spontaneous fracture. Table 2 gives the characteristics of the 44 patients with a spontaneous fracture, compared to the remaining patients.

Table 1. Number and type of spontaneous hip fractures

	Not pathological	Pathological	Total
Acute pain, then fall	2	0	2
Acute pain, no fall	14	7	21
0–8 weeks' pain, then fall	11	5	16
0–8 weeks' pain, no fall	13	7	20
Chronic pain, no fall	4	5	9
Total	44	24	68

Table 2. Characteristics of spontaneous fractures compared to the remaining patients. Pathological fractures were excluded

	Spontaneous	Not spontaneous
Number of cases	44	828
Average age	79	78
Male (fraction)	10 (0.2)	218 (0.26)
From own home (fraction)	36 (0.8)	725 (0.88)
Average mobility score ^a	5.0	6.2
Average mental test score	6.6	6.9
Average ASA score	2.7	2.6
Intracapsular fracture (fraction) ^a	37 (0.8)	489 (0.59)
Undisplaced intracapsular fracture	8/37 (0.2)	124/489 (0.25)

^a $p < 0.001$, chi-square test

Discussion

The diagnosis of a spontaneous fracture will inevitably be imprecise. Even careful questioning as soon as possible after admission may not elicit a clear history. Moreover, mental impairment or confusion, relatively common in these patients, can preclude any description of events leading to the fracture from being obtained.

The proportion of 7% spontaneous fractures presented here may be a small underestimation of the true rate. Some patients may not admit to pain in the hip prior to the fall, and we excluded from the analysis the 297 patients who were unsure. Mental impairment due to senile dementia was generally the reason for exclusion. Furthermore, those with pain in the hip for over 8 weeks before the fall were not considered as spontaneous. In these cases, it was assumed the pain was due chronic disease in the hip such as arthritis, however, the possibility exists that it was from a spontaneous fracture.

In the whole group of 915 patients, only 2 gave a clear history, matching the classic description of acute

pain followed by a fall. This compares to the series of Clark (1968) with 2 of 450 having spontaneous pain then a fall. 50 patients out of 915 (5.5%) suffered a fracture without any history of a fall. This is higher than the previous reports of 1.3% (Alffram 1964) and 3% (Clark 1968). Our study, however, confirms the findings of previous reports that spontaneous fractures are likely to be intracapsular (Alffram 1964, Sloan and Holloway 1981, Horiuchi et al 1988).

The patients with a spontaneous fracture were similar to the remaining patients, except for a slightly reduced mobility score. The number of spontaneous fractures in this study was too small for making definite recommendations on the choice of treatment.

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