Acta orthop. scand. 47, 664–667, 1976

THE INCIDENCE OF OSTEOCHONDRITIS DISSECANS IN THE CONDYLES OF THE FEMUR

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The incidence of osteochondritis dissecans in the condyles of the femur was studied in a defined population and was found to be twice as common in men as in women; the maximum incidence in both sexes being between the ages of 10 and 20. The site of the lesion in the condyles did not differ between age groups. The incidence of diagnosed cases has increased somewhat in recent years but only in men. The incidence in the population is less than has been suggested in the past.

Key words: osteochondritis dissecans; femur condyles; incidence

Accepted 22.ix.76

Osteochondritis dissecans in the condyles of the femur is supposed to be a fairly common condition (Aegerter & Kirkpatrick 1969). How common is not known since there is no incidence study available based on a given population. The aim of the present study is to describe the incidence of osteochondritis dissecans in the city of Malmö.

PATIENTS AND METHODS

The city of Malmö in southern Sweden has a population of about 250,000. There is only one general hospital with one orthopaedic department and one roentgendiagnostic department in the city. The health system, a fairly stable population, and the fact that detailed population data are available have, in the past, proved that Malmö is well suited for epidemiological investigations.

The study embraced all patients with a diagnosis of osteochondritis dissecans in the condyles of the femur. The diagnosis was based on a radiogram or on an operative finding. Only cases diagnosed before the age of 50 were accepted. The study took place between 1965 and 1974 (10 years) and during that period all cases were included which were diagnosed for the first time. In the radiogram, not only the diagnosis of osteochondritis dissecans was secured but it was also established whether or not the epiphyseal line in the distal end of the femur was closed. There are a few radiologists who work privately in the city and their records were also searched for cases of osteochondritis dissecans. It was found that cases diagnosed by these radiologists were usually recorded at the hospital and therefore automatically included in the study. It must be assumed that at least 95 per cent of all cases of osteochondritis dissecans diagnosed during the period under study are therefore included.

All the patients were subdivided according to sex and age. Thanks to City Financial Council Committee, data concerning the population were obtained for sexes and for age groups representing the average of the period under observation. Age- and sex-specific incidence were calculated and expressed as the number of patients with osteochondritis dissecans diagnosed in the femoral condyle per 100,000 of the population at risk. Standard statistical methods were applied.

Financial support was obtained from the Swedish Medical Research Council (project no. B 76–17X–2737–08A).

Table 1. Distribution of osteochondritis dissecans in Malmö over the years with regard to age and sex.

Age	1965		1966		1967		1968		1969		1970		1971		1972		1973		1974		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
0–9				1		1				1		1			2		1				3	4	7
10–19	7	1	3		3	4	3	6	4	3	5	5	4	3	4	3	10	3	5	3	48	31	79
20–29	2	1	2	2			6	1	2	1	3	1	2	1	5	1	1	1	5		28	9	37
30–39	2	1					2		1	1			2	1	1		2	1	2		12	4	16
40–49	2			2			1		2				1	1	2		3	1	2		13	4	17
	13	3	5	5	3	5	12	7	9	6	8	7	9	6	14	4	17	6	14	3	104	52	156

RESULTS

Between 1965 and 1974 altogether 156 patients with osteochondritis dissecans in the femoral condyles were diagnosed in the city of Malmö. Seventy-eight were located in the right knee, 69 in the left knee and 9 were bilateral, in all 165 joints. The ratio men to women was 2 to 1. The distribution with regard to age and sex is presented in Table 1. The lesions were localized as demonstrated in Figure 1. The age- and sex-specific incidence for the entire period under study are shown in Figure 2. When the cases were subdivided into two 5-year groups according to the time of their diagnosis, there was a significant difference between the first and the second time period in the incidence of osteochondritis dissecans in men ($0.01 > p > 0.001$) (Figure 3). This change was not related to whether the epiphyseal line was closed

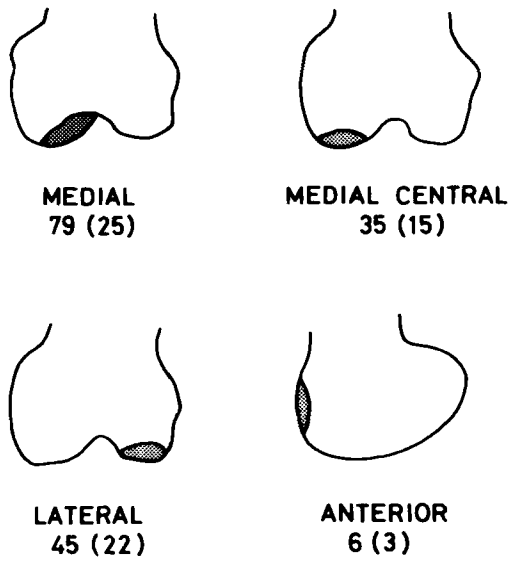

Figure 1. Site of osteochondritis dissecans lesions in the condyles of the femur. The number in brackets represents patients who had not closed the epiphyseal line of the distal end of the femur at the time of diagnosis.

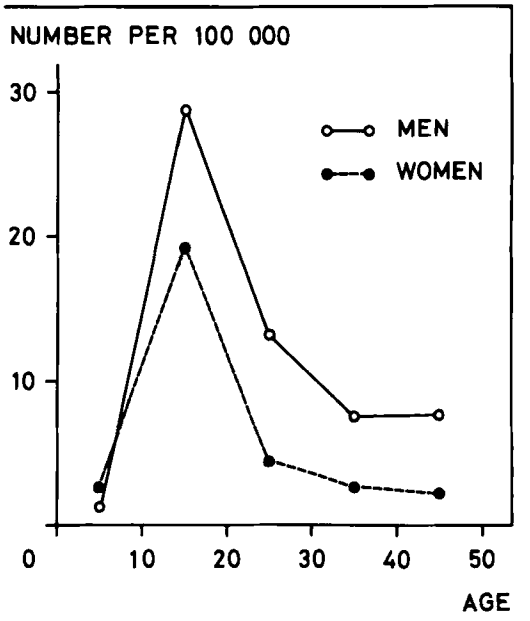

Figure 2. Age- and sex-specific incidence of osteochondritis dissecans in the femoral condyles in Malmö.

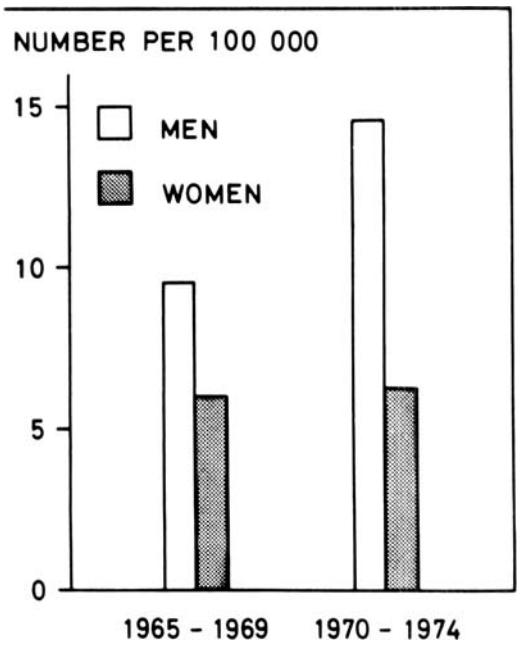

Figure 3. Age- and sex-specific incidence of osteochondritis dissecans in the distal end of the femur. Comparison between the first and the second part during the period under observation.

or not at the time of diagnosis or to the location of the lesion. There was no such change during this time in women.

DISCUSSION

The age and sex distribution as well as the localization of the lesions are well in agreement with the findings of other authors (Green 1966, Aichroth 1971 and Lindholm 1974). Only a few cases were diagnosed before the age of 10 and the maximum incidence was found between the ages of 10 and 20. Osteochondritis dissecans is twice as common in men as in women, and is usually localized in the lateral part of the medial femoral condyle. The localization is smaller in children and adults. The increase in incidence of osteochondritis dissecans is confined to men in this study. The population under the age of 50 was comparatively stable during the years 1965 to 1971, about 175,000, but this decreased slowly to about 157,000 in 1974. Nevertheless, the number of diagnosed cases increased in men. The total number of knee radiograms taken in the hospital increased from about 2,500 in 1965 to 7,800 in 1974. This fact, of course, may account in part for the change in incidence but does not explain why only men would benefit from better diagnostic efforts. An additional explanation is the increasing sports activities in the city. The number of people enrolled in common sports activities, such as football, has at least doubled in the last 10 years (Nillius et al. 1976). Such a finding would imply a traumatic origin in some of the osteochondritis cases or at least that it was due to trauma that the condition was being diagnosed. The numbers presented in this study are estimates of minimum incidence. There may by undiagnosed lesions without clinical symptoms which can be revealed only in population studies. The incidence found in our sample was lower than that in past studies (Aegerter & Kirkpatrick 1969). However, taking into account the high risk of gonarthrosis (Lindén 1976), it can be concluded that at least 4 per cent of all cases of so-called primary gonarthrosis in men are, indeed, caused by osteochondritis dissecans earlier in life.

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