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ABNORMALITY OF THE ISCHIOPUBIC JUNCTION

Report of a Case

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The occurrence of radiographic changes in the synchondrosis between the inferior pubic ramus and the inferior ischial ramus in children has been recognized for a long time. *Odelberg* (1923) and *van Neck* (1924) were the first to describe changes termed ischiopubic osteochondritis. The radiographic findings in these patients are: swelling and demineralization of the ends of the bones adjacent to the synchondrosis. Clinically, the changes may be accompanied by pains in the hip, the groin or the gluteal region and by limping and restricted movement. In a few patients there is, in addition, tenderness of the synchondrosis and a swelling palpable per rectum.

Subsequently, attention has been directed towards this clinical syndrome, also termed van Neck's ischemic necrosis. From a review of the literature, about 60 cases were found.

In their series relating to the fusion of the ischiopubic synchondrosis in normal children, *Heeren* (1933), *Praetje* (1934), *Junge & Heuck* (1953) and *Caffey & Ross* (1956) demonstrated radiographic findings which corresponded completely to the findings described by *Odelberg* and *van Neck*. Hence, *Caffey & Ross* state that, in the age group between 6 and 9 years, swelling and demineralization of the ischiopubic synchondrosis were found on one or both sides, in upwards of 50 per cent. The incidence of these findings was higher among girls. In the normal series, a few cases were found presenting clinical signs similar to those described inter alia by van Neck and, most recently, *Byers* (1963) and consequently, it is doubtful whether it is justifiable to consider ischiopubic osterochondritis to be an independent entity. Several authors, among them *Caffey & Ross* and *Byers*, suppose that these changes are transitory stages of the normal fusion of the synchondrosis.

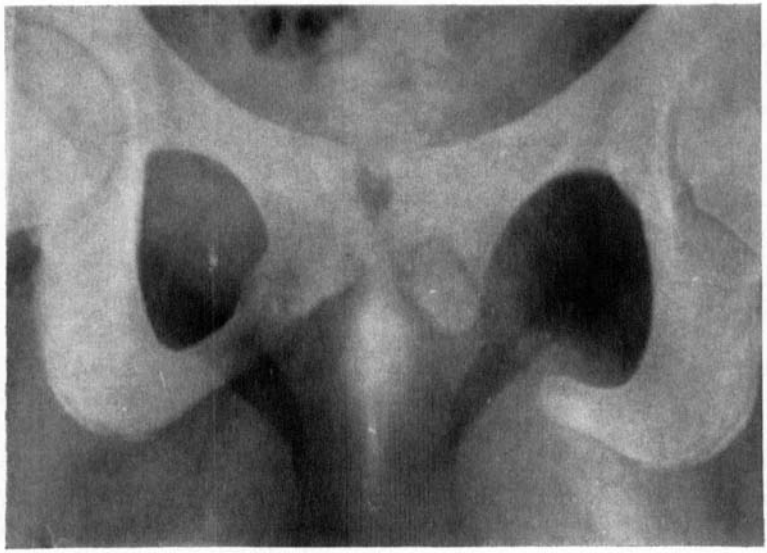

Figure 1. Radiograph of the pelvis in a 14-year-old girl showing ischiopubic osteochondrosis on the left. On the right a 22 mm wide gap is noticed between the bone ends of the inferior ischial ramus and the inferior pubic ramus. Check radiograph 18 months later shows unchanged conditions.

The object of this paper is to report a patient with symptoms resembling osteochondritis, but with a radiographic appearance of the ischiopubic synchondrosis which has not been described previously.

CASE REPORT

A 14-year-old girl (Record No. 530624) was admitted to hospital because of pains in the hip. Family history non-contributory. Normal delivery. The pregnancy was normal and the mother had not taken any drugs.

Because of inguinal hernia of the right and left side, respectively, she was operated on at the ages of 18 months and 7 years. At the age of ten, she was admitted to a cardiological unit for examination because of a suspected congenital heart disease. Ventricular septal defect was diagnosed, but no symptoms of cardiac insufficiency were found.

The onset of the present symptoms was about 1 month before this admission, with pains in the right hip joint, and limping. No previous trauma or intercurrent diseases. The patient was admitted to a local hospital and, on the basis of the radiographic findings, the case was regarded as a traumatic lysis of the right ischiopubic synchondrosis. She was treated by rest in bed in 14 days and was then transferred to the department of Orthopaedic Surgery, Naestved.

On admission to the latter unit physical examination revealed a slender, dark-haired, well-built girl. Height 159 cm, weight 43 kg. No sign of cardiac insufficiency.

The secondary sexual characters were well developed (menstrual function not yet established).

She walked with a slight limp but without any pain. A slight displacement of the pelvis downwards and to the left was found and was accompanied by a shortening of 1.5 cm of the left leg. No palpable swelling or tenderness of the ischiopubic synchondrosis was present. Neither by rectal nor external palpation were spasms of the adductor muscles observed, and passive movements of the hips were full.

During her stay in hospital, the patient was given corrective and walking exercises and a 1 cm higher heel was built on the left shoe. She was discharged on the tenth day, at which time she walked normally and without pain. At the follow-up examination in the outpatient clinic 18 months later, unchanged conditions were found.

Laboratory investigations showed normal values as did renal function tests. Radiographic examination of the pelvis revealed on the left side an ischiopubic osteochondrosis with slight rarefraction, prominence and demineralization (Figure 1). The corresponding region on the right showed a gap of 22 mm. The adjacent bone ends were smooth with normal osseous structure (Figure 1). 18 months later radiograph of the pelvis showed unchanged conditions. Radiographs of the knees, wrists and shoulders showed normal conditions. Chromosome examination normal (The University Institute of Human Genetics, Copenhagen).

DISCUSSION

According to Pratje, the ossification of the ischiopubic synchondrosis falls into four stages. Stage I comprises cases with an intervening cartilaginous bar not more than 1 mm thick. During stages II, III and IV, fusion of the gap begins and continues. Pratje considers stage II as the time of the beginning of the fusion and states the normal age interval for this stage to be between 4 and 5 years for girls, limits 3 and 10½ years. More recent authors (*Caffey & Ross*) have recorded the time of fusion as being at the age between 4 and 12 years. The difference between the times of fusion of the ischiopubic synchondrosis reported in these two series is caused by the fact that the latter authors apply Pratje's stage III and IV. On the basis of the above series we find it justifiable to consider our case to be with no ossification of the ischiopubic synchondrosis since a control period during 1½ years does not reveal any change of the defect and the patient now must be considered as fully matured.

In our opinion the possibilty can be discounted that the lesion is a stress fracture or possibly a traumatic lysis of the synchondrosis, since 18 months later the radiograph showed no formation of callus, just as the clinical picture does not lend support to these assumptions.

On review of the literature, only one case could be found resembling

our case radiologically (*Janker* 1930). That case was considered to be anomalous ossification of the ischiopubic synchondrosis in a 26-year-old woman but subsequent radiographic examination revealed formation of callus corresponding to the defect, indicating fracture or possibly lysis of the synchondrosis.

No features suggesting endocrine disorders were found in our patient, in particular no signs of myxodema. On the basis of our examinations we find that the presence of congenital malformations like enchondral dysostosis and cleido-cranial dysostosis can be discounted, in which cases a delayed fusion of the ischiopubic synchondrosis can be seen.

Occasionally delayed unilateral fusion of the ischiopubic synchondrosis can be seen in connexion with shortening of the lower extremities because of disorders such as Perthe's disease, poliomyelitis, hemiplegia and congenital femoral defects (*H. J. Kaufmann* 1964). None of these disorders could be found in our patient.

The asymptomatic osteochondrosis of the left ischiopubic synchondrosis is considered to be part of the normal fusion process.

SUMMARY

A case with no ossification of the ischiopubic synchondrosis in a 14-year-old girl is described. On the basis of previously published normal series relating to the fusion of the ischiopubic synchondrosis the justification of considering the case to be a missing ossification is discussed. Diseases which may exert an influence on the fusion of the ischiopubic synchondrosis are mentioned with a view to the differential diagnosis.

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