SPONTANEOUS SUBLUXATION OF THE STERNOCLAVICULAR JOINT

BY

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Simplicity and innocence appear to be as disarming to the medical author as they are to the novelist, and this explains why no reference to the condition of slow, painless subluxation of the sternoclavicular joint in elderly people has been found in the literature until the appearance of the paper by Bremner (1959). The condition is comparatively common, and an inspection of the neck-line will show inequality in the prominence of the sternal end of the clavicle in many elderly women who are unaware of it and in whom no symptoms arise. In a small group, however, subluxation of the joint becomes so pronounced that the subcutaneous bulge produced by the sternal end of the clavicle is noticed by the patient or arouses suspicions of neoplastic change in the mind of the doctor, and this is the commonest diagnosis encountered when patients are referred to an out-patient clinic.

A Series of Cases

My interest having been aroused, I have kept a record of cases seen, and in two years have been able to collect 11 (see Table). They fall into two distinct groups:

List of Cases

Case No.	Age	Duration of Swelling	Side	Associated Disease	Occupation
1	21	1 month	R	None	Clerk
2	16	1 year	R	"	Typist
3 (male)	14	Not known	R	"	Schoolboy
4	15	3 weeks	R	Fracture of right clavicle, aged 2½	"
5	35	5 months	R	None	Typist
6	81	3 "	R	"	Housewife
7	72	Years	R	Degenerative tendinitis short rotator cuff right shoulder	"
8	59	5 years	L	Osteoarthritis lumbar spine and hands	"
9	67		R	Tuberculosis lumbar spine	"
10	79	Years	R	Spondylolisthesis L 4 on L 5	"
11	69	5 months	R	Herpes right side of neck and shoulder	"

(1) the spontaneous subluxation in the elderly (six cases), presumably due to tissue relaxation with age in a joint which is primarily dependent on the strength of the sternocostal ligament for retention; and (2) a group of less obvious cases with mild subluxation seen in adolescents (four cases). With regard to this second group it is difficult to state whether the condition is a mild congenital laxity of the joint and abnormal enlargement of the sternal end of the clavicle, or the end-result of a minor injury—for example, a fracture of the clavicle in childhood—or subacute infection.

In the elderly these cases are nearly all symptomless, but occasionally patients present with a history of some aching pain in the region of the joint, sometimes associated with their occupation—for example, typists. Owing to technical difficulties radiological examination confirms the subluxation only in marked displacement; occasionally it shows evidence of osteoarthritic change and general osteoporosis in the elderly patient, but it adds nothing to explain the cause.

Diagnosis

The differential diagnosis includes tumours of the skin and subcutaneous tissues in the region, which are readily enough excluded. Less easily excluded are congenital anomalies, usually of the first rib, tumours of the inner end of the clavicle (our only recorded case being a Brodie's abscess of tuberculous origin), and subacute infective arthritis. Tumours below the clavicle may produce subluxation. Occasionally there is traumatic dislocation of the sternoclavicular joint, which in spite of treatment is seldom cured and leaves the sternoclavicular joint subluxated but symptomless in most cases (Fig. 1). In the cases noted in the elderly, the right sternoclavicular joint was involved in all but one patient, and she was left-handed. As the condition never presented with acute symptoms, and cases which had been kept under observation showed no change over the years, operative procedures were not carried out. The death of one patient (Case 10) enabled us to examine both sternoclavicular joints, and these showed osteoarthritic changes, with erosion of cartilage and exposed bone. On the right side there was marked degeneration of the intra-articular fibro-cartilage, and communication was established with the sternocostal joint of the right rib on that side (Fig. 2). The sternocostal joint showed osteoarthritic changes similar to those of the sternoclavicular joint. It was filled with an opaque mucous fluid, dirty grey in colour.

FIG. 1.—Characteristic appearances of a mild subluxation of the right sternoclavicular joint in Case 11.

Histology

Histological examination showed a papillary fibro-synovial proliferation upon which much fibrin and numerous small intra-articular fibrinous bodies were

FIG. 2.—Macroscopic appearances of the right sternoclavicular joint in Case 10. Post-mortem specimen. A, Eroded and degenerate end of the right clavicle. B, Fibro-cartilaginous disk. C, Communication with the sternocostal joint of the first rib, which is also osteoarthritic.

being formed. There were a few lymphocytes, but no evidence of a true infective origin was seen. The articular surfaces were covered by some fibrous overgrowth, but in other places the joint surfaces were eroded and showed degeneration of the cartilage. These changes represent a combination of fibrosis and degenerative change of an osteoarthritic type, and there is a close similarity to the changes reported by Bremner in his series of joints which were explored (R. Drury, personal communication). The pathological changes noted seem to support the view that the condition is primarily one of joint degeneration of an osteoarthritic type, and further support is given by the clinical findings and the harmless and uneventful progress of the cases.

Conclusion

It is apparent that the following conditions may easily be confused, and recognition of the syndrome and its observation enables one to distinguish. (1) Subluxations in adolescence—for example, after childhood fractures of the clavicle, or a congenital defect in or near the joint. (2) Subluxations due to subacute infective arthritis: (a) associated with general disease—for example, rheumatoid arthritis; (b) monarticular. (3) Subluxation due to degenerative changes in the elderly, affecting the right shoulder in most cases, but possibly the left in left-handed patients, usually symptomless and stationary, but increasing slowly in some cases. These cases appear to be limited entirely to the female sex.

REFERENCE

Bremner, R. A. (1959). *J. Bone Jt Surg.*, 41B, 749.

TWO CASES OF CONGENITAL COMPLETE HEART-BLOCK DIAGNOSED ANTENATALLY

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Congenital abnormalities of the foetus occur in from 1 to 2% of total births, and those affecting the heart are much less common than deformities of the central nervous system. A cardiac defect associated with complete heart-block is rarer still, and, so far as antenatal diagnosis of this condition is concerned, McNie and Johnstone (1959) have remarked on 13 such cases recorded by various authors, and illustrated one of their own due to an interauricular septal defect. Their article, plus the fact that congenital foetal abnormalities are becoming of increasing importance as a cause of stillbirths and neonatal deaths, has prompted me to record two further cases of congenital complete heart-block diagnosed antenatally.

Case 1

A primigravida aged 23 booked for hospital confinement when 12 weeks pregnant. Her family and previous medical history showed nothing of importance and all routine investigations were normal. A threatened miscarriage at 18 weeks necessitated a week's stay in hospital. Apart from this the pregnancy was uneventful until she was admitted in very early labour at 38 weeks by her dates. I was called to see her on account of a slow foetal heart rate.

On abdominal examination the uterus was small for the dates, but the presentation was vertex, back to the left, and

the head was deeply engaged in the pelvis. The uterus was soft and no tenderness was elicited. Slight contractions, one in 15 minutes, were noted. The foetal heart rate was only 40 a minute but quite regular, and this rate was maintained during continuous auscultation for several minutes. On vaginal examination the cervix was effaced, dilated one fingerbreadth, and well applied to the head, which was in mid-cavity. The membranes were intact, no cord was felt, and bleeding was absent. Her blood-pressure was 130/70 mm. Hg, urine examination was negative, and there was no evidence of oedema. Perusal of the antenatal card showed that she had last been seen two weeks previously, when everything had been satisfactory; but all previous observers had relied on the presence of foetal movements to confirm a living foetus.

In the absence of any obvious cause of foetal distress and because of the very slow regular heart rate, I made a tentative diagnosis of congenital cardiac abnormality with complete heart-block, and allowed labour to proceed. The first stage lasted four and a half hours and the second stage half an hour, ending in a vaginal vertex delivery after a small episiotomy. The membranes ruptured at full dilatation of the cervix and the liquor was clear. Throughout the labour the foetal heart rate remained regular at 36 to 42 a minute. Finally the third stage was normal, lasting 10 minutes, and inspection of the placenta and membranes showed no abnormality.

The infant, a female weighing 5 lb. 12 oz. (2,608 g.), cried well at birth, dispelling initial cyanosis. Results of investigations were as follows: haemoglobin, 129%; white cell count, 9,200/c.mm. Film showed nothing of note. X-ray examination of chest showed generalized enlargement of the heart shadow, indicating a congenital cardiac malformation; no evidence of lung disease. Electrocardiogram showed complete auriculo-ventricular dissociation, with regular QRS complexes at 42 a minute. Clinically the infant showed no cyanosis and no murmur was heard. It was thought that the likeliest cause of the block was a septal defect and that the prognosis was poor. The infant was artificially fed and was discharged with the mother 10 days after delivery, having regained her birth weight. During this time her condition gave rise to no anxiety and the heart rate was stable at 40 a minute.

Subsequent Progress.—When 3 weeks old the infant was readmitted to the children's ward as the mother stated the baby was crying and did not feed properly. The weight was now 6 lb. 2 oz. (2,778 g.), but there was still no cyanosis or cardiac murmur, and the heart rate remained at 42 a minute. Despite routine care the infant's condition gradually deteriorated, with increasing poor colour at feeding times, and death occurred at the age of 6 weeks. Unfortunately permission for a post-mortem was not obtained.

Case 2

This case was noted some six months after Case 1. A primigravida aged 19 was booked for hospital confinement at 19 weeks' gestation. There was nothing relevant in the medical history, and all routine antenatal investigations were normal. The pregnancy was uneventful until the 36th week, when I was asked to see her as the foetal heart had been auscultated and found to be irregular. When I listened it was exactly like an adult heart with auricular fibrillation. The foetal heart was completely irregular at a rate of 88 a minute. The presentation was vertex, with the head just at the pelvic brim, and vaginal examination was negative. The maternal pulse was regular at 80 a minute. Remembering the previous case, I again suspected congenital heart disease with a probable complete block or possibly a partial one as the foetal heart was so very irregular. An x-ray film of the abdomen showed no obvious skeletal abnormality. As the hospital had recently acquired a phonocardiograph an attempt was made to record both a foetal electrocardiogram and phonocardiogram, using the epigastric-suprapubic positions for the suction electrodes as suggested by Southern (1954). Though tracings were obtained it was