

BILATERAL INTRADELTOID OSSIFICATION : A CAUSE OF GLENOHUMERAL ABDUCTION CONTRACTURE

by J. MYLLE*, P. McCOMBE** and C. WEATHERLEY**

A case of bilateral glenohumeral abduction contracture is presented. Two features are unique : intradeltoid ossification and progressive deformity without recent trauma. A review of the literature is given.

Keywords : shoulder ; abduction contracture ; ossification.

Mots-clés : épaule ; raideur en abduction ; ossification.

RÉSUMÉ

*J. MYLLE, P. McCOMBE et C. WEATHERLEY.
Ossification deltoïdienne bilatérale, cause d'une raideur en abduction de l'articulation gléno-humérale.*

Un cas de raideur bilatérale en abduction de l'articulation glénohumérale est présenté. Deux signes cliniques sont spécifiques : une ossification intradeltoidienne et une déformation progressive sans traumatisme récent. Revue de la littérature.

SAMENVATTING

*J. MYLLE, P. McCOMBE en C. WEATHERLEY.
Bilaterale deltoïdeusspierossificatie als oorzaak van glenohumerale abductiecontractuur.*

De auteurs beschrijven een geval van bilaterale glenohumerale abductiecontractuur. Twee eigenschappen werden voordien nooit beschreven : ossificatie in de deltoïd-spieren en progressiviteit van de abductiecontractuur zonder recent trauma. Bespreking van de literatuur.

CASE REPORT

A 45-year-old surgeon presented with a 2-year history of interscapular pain, which had coincided with increased use of the operating microscope. He had noticed that he was no longer able to bring his arms down to his side. At age 3 years he had received injections in the gluteal and deltoid regions for encephalitis. He had received no further injections and was otherwise well.

Examination showed a healthy man with both arms held away from his side (fig. 1). The intermediate part of both deltoids was firm, but the muscle contour was normal and there were no scars, dimples or tender areas. There was a bilateral abduction contracture of both shoulders measuring 30°, beyond which the movement of both shoulders was normal. Examination of the cervical spine and scapulae was normal. Radiography showed bilateral identical changes consistent with ossification in the deltoid region (fig. 2). The ossification proved to be within the intermediate part of the deltoid on computerized axial tomography (fig. 3). Radiography of the gluteal region and a bone scan were normal. Biochemical tests including full blood count, erythrocyte sedimentation rate, bone profile, muscle enzymes and tissue antibodies were also normal.

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It was felt that the interscapular pain was due to fatigue of the periscapular muscles, especially while operating. Antiinflammatory drugs were given without effect. A program of decreased use of the arms and provision of elbow supports, to be used while operating with the microscope, led to gradual improvement.

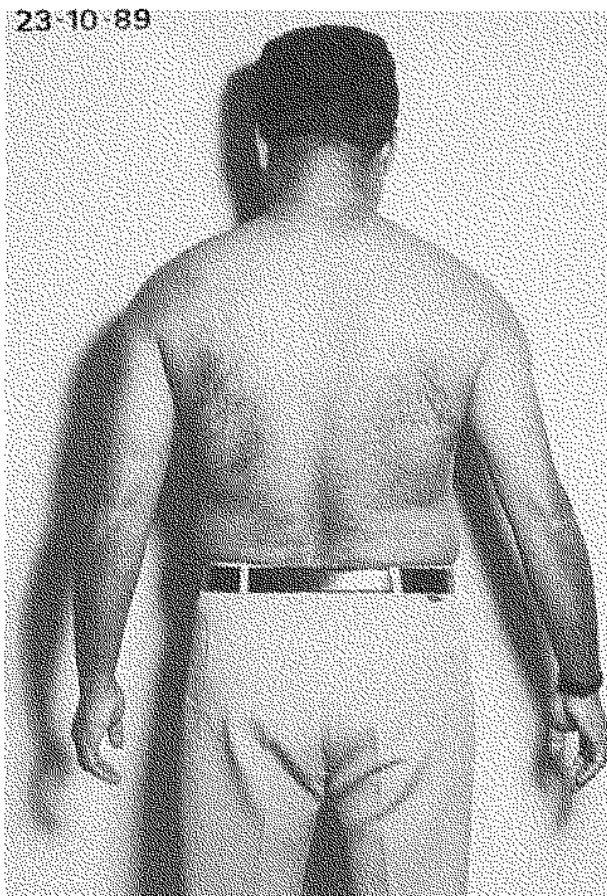


Fig. 1. — The patient cannot bring his arms down to his side.

DISCUSSION

Abduction contracture of the glenohumeral joint is rare. Sato first described three cases in 1965

(5). In these, fibrosis, attributed to intradeltoid injections, was described in the intermediate part of the deltoid. The contractures associated with multiple injections in early childhood have been reported most often in the quadriceps muscles (3, 4, 6, 7), but seldom in deltoid muscles (1, 2, 5, 7). They become rapidly progressive shortly after the injections have been given. Once a fibrous band is formed, the deformity does not progress further. Many authors stated that the contractures were caused by specific drugs, notably pentazocine (3, 4). However, some cases of deltoid fibrosis have been reported without a history of injections, and a congenital origin has been considered in these cases. Bhattacharyya (1) postulated that the intermediate part of the deltoid was prone to fibrosis because of its numerous fibrous septa. Fibrosis after injection may be a sequel of pressure ischemia or a result of chemical myositis.

Our case shows features that distinguish it from all previously described cases. First, the contracture is caused by ossification, rather than fibrosis. Second, the deformity progressed without recent trauma or injections.

Ossification in muscle can be seen as part of a generalized syndrome (myositis ossificans progressiva) or after trauma or operations. Our patient has none of the features of the generalized syndrome and has not had any recent trauma in the area of the ossification. There is no evidence of a biochemical abnormality or of scleroderma. The progressive nature is also unusual. All previously reported cases developed shortly after intramuscular injections, or early in childhood when they were congenital.

Surgery for glenohumeral abduction contractures in association with fibrous bands has generally been reported as successful. In our case, as can be seen from the radiographs and the CT-scan, the volume of affected tissue that would need to be excised is large, and correction might not be achieved. We report this case as a new cause of abduction contracture of the glenohumeral joint. The origin remains obscure. We recommend radiography of all patients with this contracture and, if ossification is present, operative management may not be indicated.

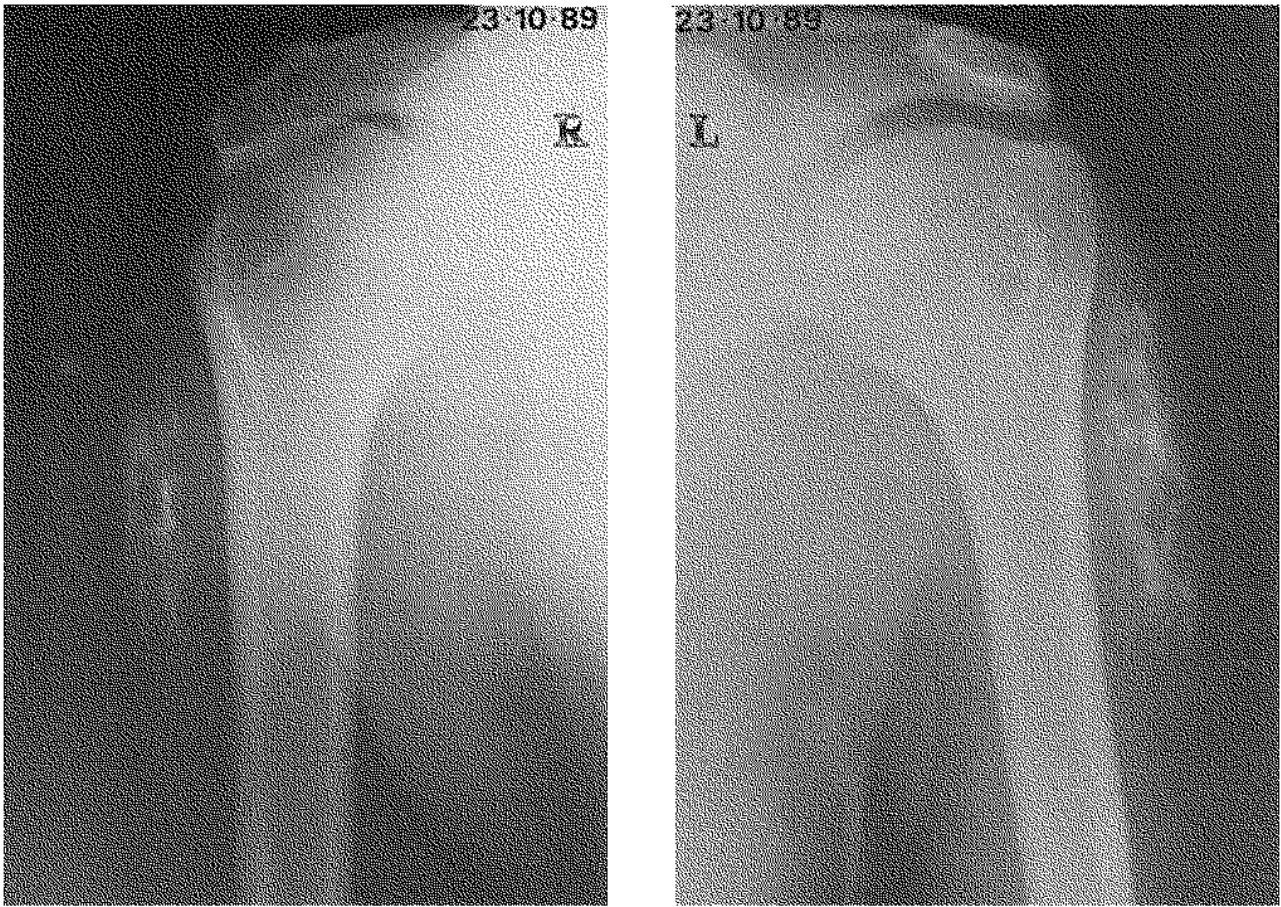


Fig. 2. — AP view of both shoulders : bilateral ossification in the deltoid region.

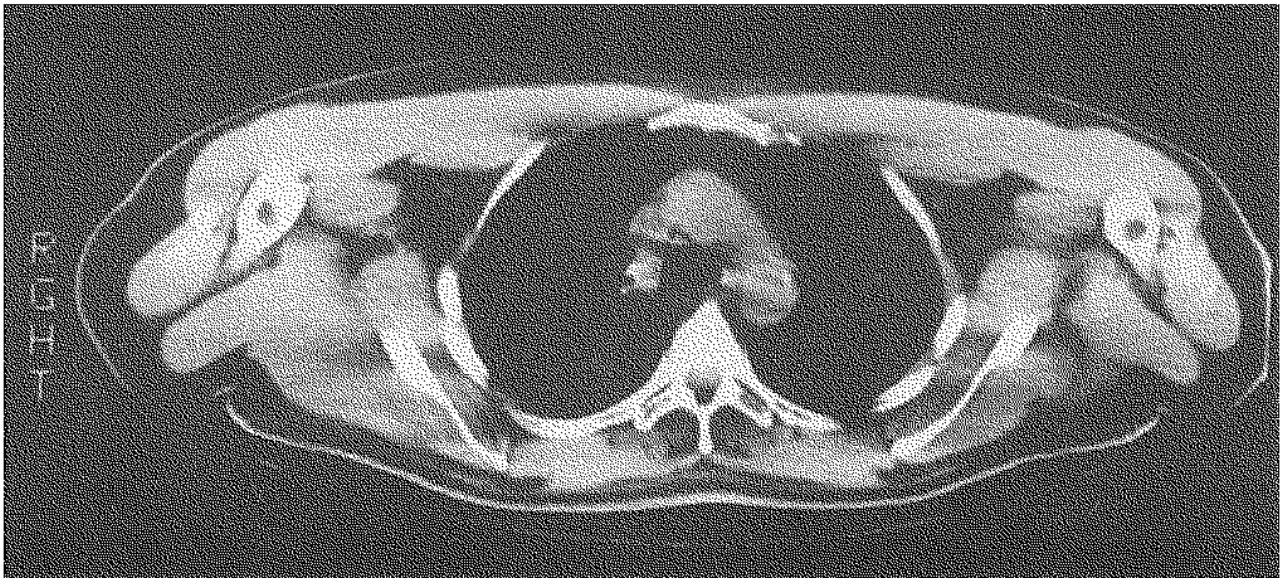


Fig. 3. — CT scan : the ossification is confined to the intermediate part of the deltoid.

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