

MYOSITIS OSSIFICANS LOCALISATA AS A COMPLICATION OF TETANUS

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The authors describe and illustrate three cases of myositis ossificans localisata which occurred among five cases of elbow contracture following tetanus.

Key words: tetanus; myositis ossificans

Accepted 25.xi.78

Myositis ossificans is a rare complication of tetanus. None of the cases of tetanus described previously in our country have been complicated by myositis ossificans, and very few cases of myositis ossificans following tetanus have been described in the world medical literature (Gunn & Young 1959, Pitts 1964, Femi-Pearse & Olowu 1971, Mitra 1976) (Table 1). Hence, we are reporting three further cases of myositis ossificans following tetanus.

Table 1. *Myositis ossificans as a complication of tetanus. Published reports*

Authors	Year	No. of cases
Gunn & Young	1959	1
Pitts	1964	1
Femi-Pearse & Olowu	1971	2
Mitra	1976	1
Total		5

PATIENTS AND METHODS

The patients, one man and two women, aged 30 to 46 years were in a coma for 10 to 30 days. During that time they were given Diazepamum 120-1200 mg endovenously and per os, and Pancuronii bromidum up to 24 ampoules per day in-

travenously in both cubital veins, which had a sedative and relaxant effect on the muscle spasm.

The elbow joint was swollen, red and painful, and the contracture developed rapidly, in one of the patients on one side only, but in the other two bilaterally. The other joints were not affected. Myositis ossificans developed about 6 weeks after the onset of tetanus.

Depending on the condition of the patients, passive exercises were carried out in the early stages, and active exercises were encouraged after the patients regained consciousness. In spite of the continued kinesitherapy, the contractures were not improved even after a period of 3 months. In two of the patients the gross contractures considerably damaged the function of the arms. One of the women patients had the joint operatively mobilized which markedly improved the functional capacity of the elbow and the arm.

DISCUSSION

The three patients had heterotopic calcification and ossification of the muscle attachments to the elbow, ossification of the capsule, and contracture of the joint, which developed while recovering from tetanus (Figures 1, 2). Skeletal survey did not show any other abnormalities.

Gunn & Young (1959) were the first to describe myositis ossificans as a complication



Figure 1. X-ray of the right and left elbows showing the mass of new bone in the brachialis and triceps brachii muscles and the capsule of the joint.

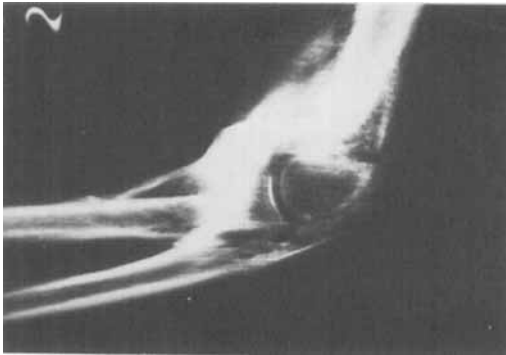


Figure 2. Tomogram of the right elbow (same patient as in Figure 1) showing a normal joint space.

of tetanus and several reports have appeared subsequently in the literature (Pitts 1964, Femi-Pearse & Olowu 1971, Mitra 1976).

The calcification, a slow passive deposition of calcium salts in the tissue, is seen as an amorphous shadow on the radiograph, hardly noticeable at first and then gradually becoming more and more dense. Finally,

as the bony masses develop in soft tissue they acquire bone-like properties.

The mechanism of ossification is not yet quite clear but in these cases appears to be similar to that of ordinary myositis ossificans following trauma (Meffert & Weber 1973, Jajić & Zečević 1974). Severe muscle spasm causing partial rupture or stretching leads to the formation of a hematoma in and around the muscles which subsequently become ossified. The ossification may be caused either by invasion of the hematoma by osteoblasts from the damaged periosteum or by metaplasia of fibroblasts.

It is assumed that the severe muscle spasms of tetanus and also the physiotherapy exercises given in the early stages may result in trauma to the joint and soft tissues. In our opinion these factors may cause myositis ossificans, ossification of the capsule, and contracture of the elbow joint.

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