MYOSITIS OSSIFICANS (CIRCUMSCRIPTA) IN THE LIGAMENTUM NUCHÆ

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To Guy Patin[1] is attributed the first description of myositis ossificans, while writing in 1692, about a woman who had become as hard as wood all over. Freke,[2] in 1740, and Copping,[3] in 1741, reported similar cases of this condition. Bulhak,[4] in 1860, classified a progressive type and an isolated type occurring in exercise and riders' bones. This condition acquired its present name from Von Dusch,[5] in 1868. Munchmeyer[6] gave the first exact description of the disease in 1869, and collected twelve cases from the literature. In recent years many cases have appeared in the literature. In 1924, Magruder[7] collected 133 cases, including his own. Rosenstirn,[8] in 1918, made an extensive review of the literature, as did also Mackinnon,[9] Nutt,[10] and many others in more recent contributions. Noble,[11] in 1924, made a clinical and röntgenological study of this condition, and classified myositis ossificans into three types: First, progressive; second, myositis ossificans circumscripta; third, a localized (traumatic) type of myositis ossificans. The progressive type is confined to young individuals, one and then another muscle progressively becoming involved with relative increasing severity with respect to discomfort and restricted function. Barr believes that this condition apparently consists of a true metaplasia of connective tissue into bone. The second type (circumscripta) includes riders' bones and exercise bones, and has as an etiological factor repeated injury and irritation over a long period of time to a limited region. Third, the localized type is a true traumatic condition in which there has been tearing of muscle tissue, hæmorrhage, and perhaps injury to the periosteum and the muscle attachments thereto.

The cases herein reported fall in the second group, as neither gives a history of any direct injury; the condition manifesting itself at about middle age, having a probable etiological factor in the form of a collar-band or button irritation at the nape of the neck.

Case 3434.—White, male, aged fifty, doctor of medicine. Present complaint is the sensation of a lump near the base of the back of his neck, which seems to come out, then disappear, and is not in itself painful except on pressure or manipulation, at which time it causes him to have a "sickish feeling," slight nausea, shortness of breath, and light-headedness. This lump was first noticed in May, 1933. It varies in prominence from day to day, but during the last three months it has become more noticeable, and he believes that it is decidedly increasing in size. Throwing his head backwards gives him this "sickish feeling." He notices this particularly when driving a car and going over bumps. The distress has become so eminent that the routine of making calls on his patients is looked upon with dread. A stiff tight collar aggravates the symptoms. He gives no history of injury. He had an attack of amœbic dysentery at twenty years of age with

six to ten stools daily for years. He ultimately recovered. He had gall-bladder disease beginning at about the age of twenty-one. He had a drainage and removal of the stones at the age of thirty-two with great relief for several years. The trouble recurred and the gall-bladder was removed in 1927. He has had some irregular digestive disturbances during the last few years with some pain in the right lower quadrant. He also had an appendectomy in 1912, and a tonsillectomy in 1926. The patient has lost twenty-five pounds in the last six months. He is subject to headaches and lumbago, but these have not been so bad recently. Both parents are living and over eighty years of age. His mother is a diabetic. There are three brothers and two sisters. One brother has diabetes. Physical examination briefly gives the following information. Blood-pressure is 122/76. Head: teeth were in good repair. No vestige of tonsils. Only slight redness in the post-pharyngeal region. Neck: a movable mass could be felt on deep pressure in the central posterior part of the neck about the level of the fifth or sixth cervical spine. The position of the mass varies with the movement of the head. It seems to have firm attachment. It can be moved more easily when the head is thrown back. It is especially tender on manipulation and deep palpation. There is nothing unusual in regard to the

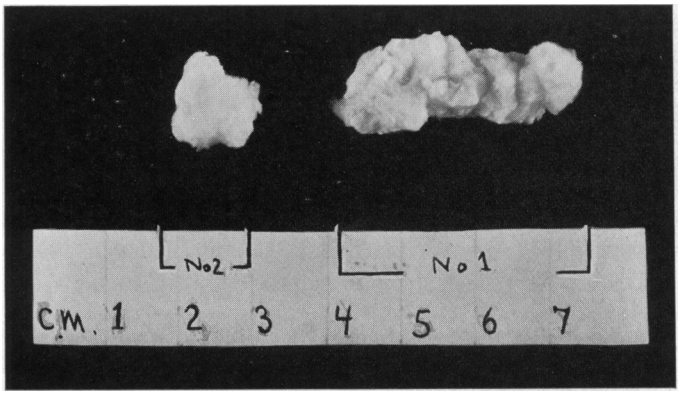

FIG. 1.—(CASE 3434.) Osteomata after removal from back of the neck. Actual size. The obliquity of the position of body No. 1, as it appears in the X-ray picture, accounts for difference in size and appearance of the removed specimen when compared with its appearance in the röntgenogram.

chest and abdomen, save for the scars as the result of previous operations and a slight tenderness in the right lower quadrant. Superficial and deep reflexes are normal.

Both anteroposterior stereoscopical and lateral röntgenograms were made of the cervical region. Stereoscopical röntgenograms show a body (Figs. 1 and 2) just to the right of the fifth cervical vertebra in the region of the spinous process. Another shadow a little lower down can be distinctly made out. Lateral röntgenograms show two bodies just behind the spinous processes of the fifth and sixth cervical vertebræ, the upper one larger than the lower. The upper appears to be elongated and extending backwards and upwards, while the lower, which is much smaller, seems rounded, with an extension of varying density upward and forward. These bodies appear of the consistency of bone, and are similar in density to the spinous processes of the cervical vertebræ, the larger body being three-eighths of an inch posterior to the fifth spinous process, the smaller one being one-eighth of an inch posterior to the sixth spinous process. Under local anæsthesia a longitudinal crescent-shaped incision was made over the area. These bodies were found to be deeply situated in the substance of the ligamentum nuchæ; the upper, larger body apparently penetrating the splenius capitis and the longissimus capitis muscles. They were firmly attached to the muscle fibres. The lower body, although close to the spinous process, was not attached to this process, but was loosely

imbedded in the ligamentum nuchæ. The wound was closed and the neck placed in a cotton collar. No complicating circumstances arose during the convalescence. In the course of a couple of weeks the doctor was once more himself. He has been completely relieved of a very annoying, as well as disabling, condition.

The second case is that of O. F. W. (I am indebted to Dr. George H. Walker, of this city, for the clinical data connected with this case.) Aged fifty-five, white, male. The patient was a salesman. He had never been sick until about six months ago when

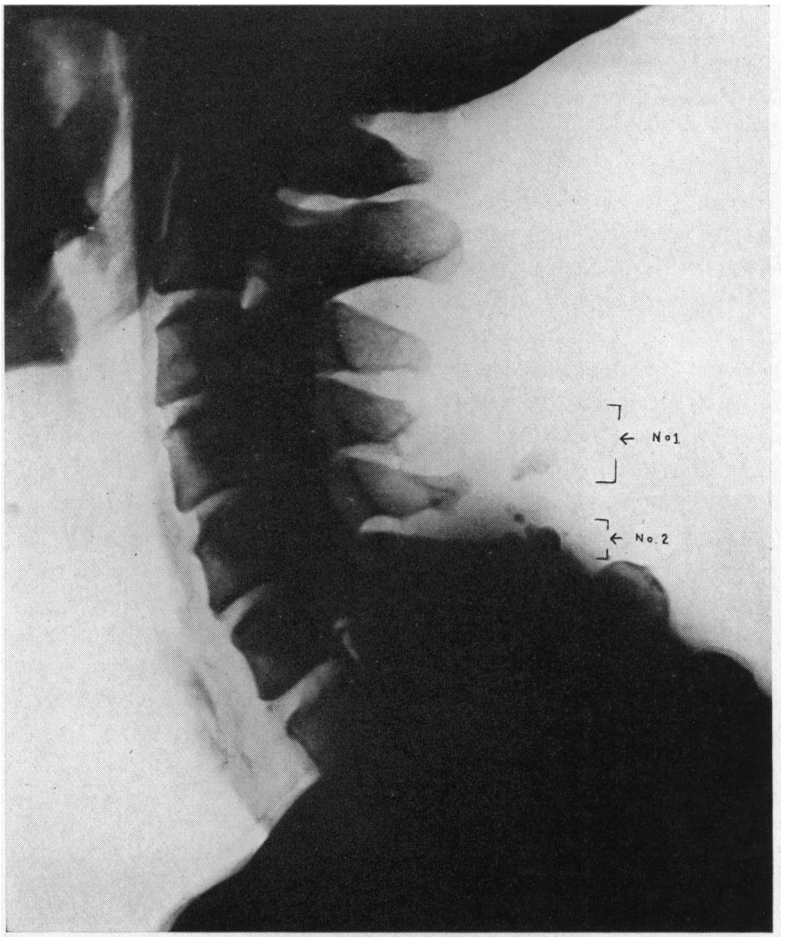

FIG. 2.—(CASE 3434.) Lateral röntgenogram of the cervical region, showing osteomata behind the fifth and sixth cervical vertebræ.

he began to run a temperature of varying degrees. Just ten days prior to his death he had a chill, developed a cough, and ultimately a left-sided pneumonia with pericarditis, myocarditis, and heart compensation. He died April 25, 1932. For several years he had complained of pain in the back of the neck, near its base. He had difficulty in moving the neck without painful discomfort in this region. The symptoms were aggravated by riding in a car or tipping the head backward. The post-mortem findings verified the clinical observations with respect to the thoracic pathology that caused his death. On account of the distressing neck complication, his family insisted on exploration of this region. A hard bony body was recovered from the substance ligamentum nuchæ behind

the seventh cervical vertebræ and extending upward three or four centimetres. No other pathological changes were found in this region.

These two cases occurring in males of about middle age, suffering the same symptoms, show a striking similarity. The one, recognizing the possibilities of surgical relief, is once more rehabilitated in his profession; the other, never seeking medical aid for the distressing neck symptoms, died of pneumonia. No other evidence of myositis ossificans was found in either of these patients. The fact that these osteomatous bodies occurred in the collar line of the neck, and the absence of a history of acute trauma, would lead one to the conclusion that possibly the continuous irritation of a tight or stiff collar band, or collar button, might be the etiological factor causing this condition. If my deduction is correct these two cases may be correctly classified as myositis ossificans circumscripta. A rather extensive search of the literature has not revealed any similar cases of muscular osteomata in the region of the ligamentum nuchæ, except in young individuals severely afflicted with the progressive type of myositis ossificans.

Recalling the post-mortem findings of the second case (O. F. W.) a year later, gave me the clue to the diagnosis of the first case cited; and the gratifying results of the operative removal of these bodies would seem to justify this report. Perhaps these two cases are not sufficiently significant to warrant the suggestion that possibly Röntgen examination of patients suffering similar symptoms might reveal osteomata. Nevertheless, their coincidence, and the result obtained by operation, are interesting. The marked similarity between these bodies and those seen in hypertrophic (osteo-arthritic) arthritis cannot be overlooked, nor can it be entirely ruled out, as the calcareous deposits of both conditions are similar. However, the lack of X-ray evidence of arthritis in the case operated upon, and the lack of post-mortem evidence of hypertrophic arthritis in the case that died, rather indicates that these are osteomata of myositis ossificans circumscripta.

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