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Sternocostoclavicular Hyperostosis: A Case Report

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— Abstract —

Sternocostoclavicular hyperostosis is a rare syndrome characterized by hyperostosis and soft tissue ossification between the clavicle and the anterior part of the upper ribs. Since first reported in 1974, the syndrome has been noted predominantly in Japan(1). Our case report describes the disorder and its radiologic manifestations.

Index Words: Bones, hyperostosis 48.862
Sternum, hyperostosis 472.862
Clavicle, hyperostosis 411.862

Sternocostoclavicular hyperostosis is a rare condition of bilateral sternal, costal and clavicular swelling and hyperostosis. Although the radiologic picture of sternocostoclavicular hyperostosis is diagnostic, findings may be misinterpretated as conditions such as condensing osteitis, cleidometaphyseal ostemyelitis and Friedrich's disease(1). We experienced a case of sternocostoclavicular hyperostosis, and its clinical, radiological and histological features were reviewed.

CASE REPORT

A 55-year-old man complained of soft tissue swelling and pain over the medial end of the right clavicle for 10 years. Three years ago, the same clincial findings developed at the medial portion of the left clavicle. Additional symptoms included nonspecific abdominal discomfort, and the patient had been treated for superficial gastritis. Physical examination revealed nonspecific findings except for clavicular swelling.

Laboratory date documented within the normal limit: white blood cell counts, serum levels of calcium, phosphorus and alkaline phosphatase. The test of the rheumatiod factor and VDRL were negative. However the erythrocyte sedimentation rate was 30 mm/hr, which was slightly elevated.

Chest radiograph and Pearson's view outlined extensive bilateral hyperostosis of the medial two-thirds of the clavicles with large ossified masses extending between the inferior aspect of the clavicles and the adjacent anterior part of the first ribs and sternum(Fig. 1A). Bone scan using technetium-99m methyldiphosphate showed markedly increased uptake in both calvicles, first ribs and upper ribs(Fig. 1B). Computed tomography showed sclerotic changes in both clavicles, sternum and upper ribs. The sclerotic changes were mainly in the cortical portions(Fig 2A,B). Other bone abnormalities including spine and sacroiliac joints were negative.

During hospital stay, a biopsy was conducted. The pathologic findings were a reactive new bone formation and it's peripheral myelofibrosis(Fig. 3A). Focal

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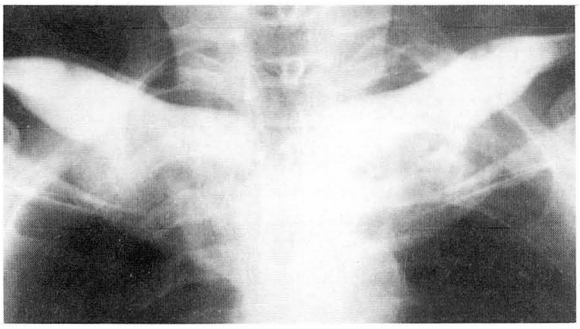

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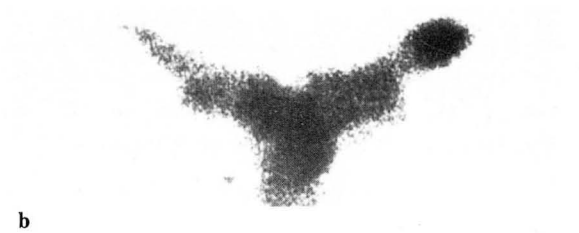

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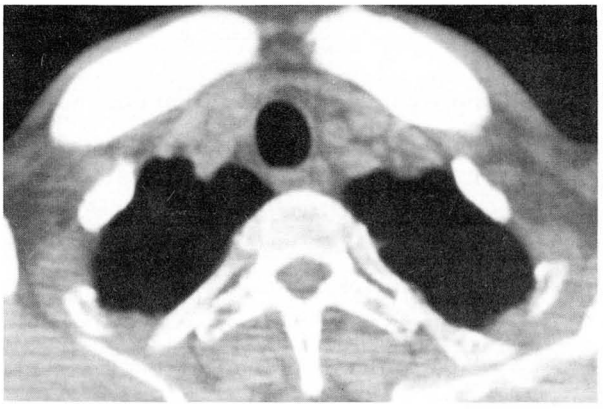
Fig. 1. a.A Pearson's view shows hyperostosis of the medial part of both clavicles. Ossification extends between clavicle, sternum, and anterior margin of first ribs.
b. Technetium 99m-methyldiphosphate scan, anterior thorax reveals increased radionucleid uptake in the medial aspects of clavicles, first ribs, and upper sternum.

necrosis of bone matrix was seen(Fig. 3B).

DISCUSSION

In 1974, Sonozaki et al described four patients with sternocostocla vicular hyperostosis. Additional cases have since been reported(1). Men are more often affected than women, and the age range, although wide, is commonly between 30-50 years (1-3).



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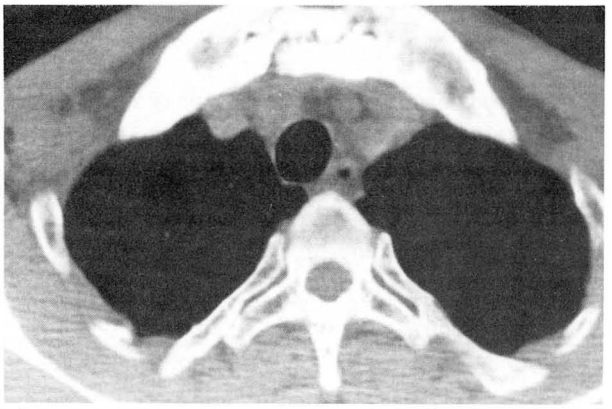

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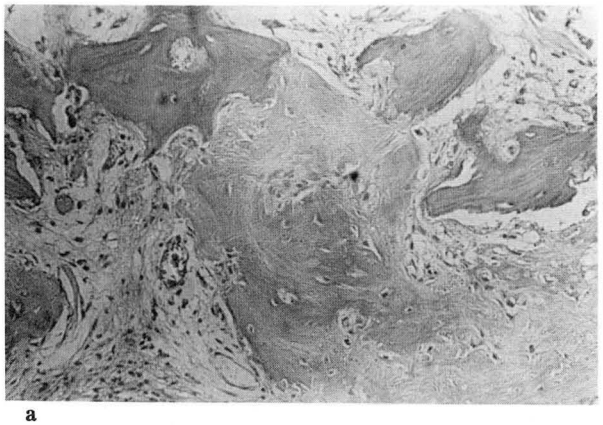
Fig 2. a. Computed tomography of the upper thorax shows diffuse sclerosis with enlargement of both clavicles and first fibs.
b. Sternoclavicular junction level reveals swelling and sclerosis in sternum and clavicles. The sclerosis is mainly cortical area.



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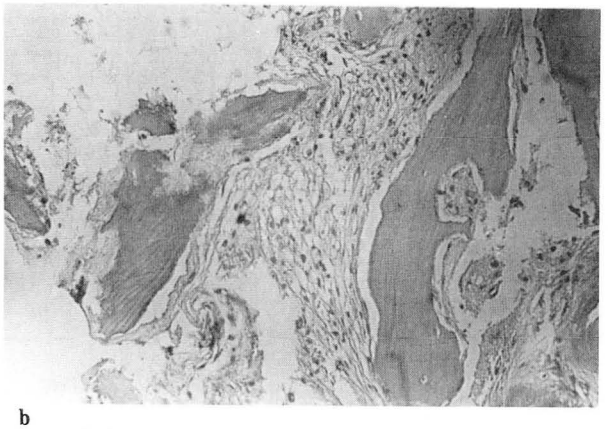

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Fig 3. a. Reactive mew bone formation and it's peripheral myelofibrosis are noted (× 200, H & E stain).
b. Focal necrosis of bone matrix is noted (× 200 H & E stain).

Clinical findings include pain, swelling and local heat in the anterior upper chest. Bilateral are predominant. Bony thickeing may lead to occlusion of the subclavian veins with veneous congestion of the upper body(1). Laboratory data may include elevated erythrocyte sedimentation rate. The α_2-globulin, and positive C-reactive protein, leukocytosis are characteristically abscent(2).

Radiographic alterations of the skeleton are the characteristic features of this disorder. Both clavicular, sternum and upper ribs show sclerosis with enlargement(1,2). Many patients with sternocosto clavicular hyperostosis also have abnormalities of the spine and/or sacroiliac joints such as ankylosing spondylitis, diffuse idiopathic skeletal hyperostosis and sacroilitis(1). However our case did not show other bone abnormalities. The nature of the skeletal abnormalities is obscure;whether the disorder is initiated as a bony or a soft tissue process is not clear(1). Radionuclide studies may reveal increased uptake in the sternoclavicular region(1,2).

Pathologic examination of the ossified mass has demonstrated marked fibrosis and new bone formation about the clavicle, sternum, and upper ribs with mild granulation tissue and round cell infiltration(1,2). Histologic changes are similar to those in Paget disease or chronic osteomyelitis, although bacteriologic examination of local tissue is universally negative(1).

Although the radiographic picture of sternocostoclavicular hyperostosis is diagnostic, we may have to differentiate it from condensing osteitis(4-7), Friedrich's disease(8,9), Paget's disease, syphilis and cleidometaphyseal (symmetric or plasma cell) osteomyelitis(3).

REFERENCES

1. Resnick D. Sternocostoclavicular hyperostosis. AJR 1980;135:1278-1280
2. Kohler H, Uehlinger E, Kutzner, West TB. Sternocostoclavicular hyperostosis: Painful swelling of the sternum, clavicles, and upper ribs. Ann Intern Med 1977;87(2):192-194
3. Resnick D. Niwayama G. Diagnosis of bone and joint disorders, 2nd ed. Philadelphia: Saunders 1988; 2311-2317
4. Brower AC, Sweet DE, Keats TE. Condensing osteitis of the clavicle: A new entity. AJR 1974;121(1):17-21
5. Cone RO, Resnick D, Goergen TG, Robinson C, Vint V, Haghighi P. Condensing osteitis of the clavicle. AJR 1983;141:387-388
6. Appell RG, Oppermann HC, Becker W, Kratzat R, Brandeis WE, Willich E. Condensing osteitis of the clavicle in childhood: A rare sclerotic bone lesion. Pediatr Radiol 1983;13:301-306
7. Weiner SN, Levy M, Bernstein R, Morehouse H. Condesing osteitis of the clavicle. J Bone Joint Surg(Br) 1984;66(9):1484-1486
8. Levy M, Goldberg I, Fischel RE, Frisch E, Maor P. Friedrich's Disease. J Bone Joint Surg(Am) 1981; 63(4):539-541
9. Jurik AG, Carvalho D, Graudal H. Sclerotic changes of the sternal end of the clavicle. Clin Radiol 1985; 36:23-25

〈국문 요약〉

흉쇄늑골 과골증 : 1예 보고

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흉쇄늑골 과골증은 흉골, 쇄골과 상부 늑골에 좌우 양측으로 골막성 골증식을 보이는 드문 질환으로 특징적인 방사선 소견을 보이며 중년 남자에서 호발하는 것으로 보고되어 있다. 저자들은 흉쇄늑골 과골증 1예를 경험 하였기에 이를 보고한다.