Tumoral calcinosis is an uncommon disorder causing single or multiple circumscribed calcified masses in periarticular connective tissue. Lesions are common around hip, elbow and shoulder joints. Right subscapular region is a relative uncommon location for tumoral calcinosis. Here we report a case of chronic renal failure under hemodialysis for 10 years. The patient complained a growing mass at his back for 3 years. Chest plain film and CT were performed and a large calcified mass was found at right subscapular region. Successful surgical resection confirmed the diagnosis of tumoral calcinosis and there was no recurrence during a 1-year follow-up period.

**CASE REPORT**

A 65-year-old man visited to his regular clinics with the chief complaint of gradually enlarged back mass for 3 years with intermittent chest pain and difficulty in dressing recently. He was well oriented with stable vital signs. Physical examinations revealed a fixed tough lump about 5 cm with moderate tenderness over his right upper back just below the shoulder. The surface of the mass was smooth with normal skin color. The mass caused limited range of motion of his right shoulder and results of related physical examination were otherwise normal.

The patient had known history of diabetes mellitus for more than 19 years, complicated with end stage renal disease, and he had been under regular hemodialysis for about 10 years. The mass gradually enlarged from 4.5cm to 6.5cm in size as compared with previous chest plain film 1 year ago (Fig. 1). Considering the possibility of malignancy and limitation of daily activity caused by mass, surgical resection was arranged. Pre-operative computed tomography (CT) revealed a well-defined, 9.5x6.0x2.5-cm, lobulated mass with calcifications at right subscapular region. There was no joint or bony involvement (Fig. 2).

The surgical procedure was performed smoothly and the histologic study revealed epithelioid cells...
and multinucleated giant cells around calcified granules. The diagnosis of tumoral calcinosis was confirmed. There was no surgical related complication, and chest plain film revealed no evidence of recurrence during his 1-year follow-up.

**DISCUSSION**

Giard and Duret first described tumoral calcinosis (TC) in 1898 and 1899, respectively [1-4]. Unfortunately, Inclan et al identified a familial type of calcified masses as TC in 1943, resulting in ambiguity of the terminology [2, 5]. Familial TC is characterized by painless, periarticular masses with a significantly higher incidence in African descents and their first two decades [1, 5-7]. However, most cases reported at Taiwan are uremic. The case we report here has a history of chronic renal failure under hemodialysis (HD) for 10 years. Franco et al identified 3 cases in 254 HD patients with lesions of similar characteristics [8]. Reviewing the recent Taiwan medical literatures, all of the 3 cases are uremic and under HD [2, 4].

There is no radiologic or histologic findings that can differentiate uremic and familiar cases [1, 5]. Lesions may demonstrate varied appearances, from small and solid to large and cystic in imaging features [1, 5]. In our case, axial computed tomography (CT) revealed multiple globular, amorphous calcified components separated by radiolucent bands, which may be suggestive of the diagnosis [6]. “Sedimentation sign” means fluid-fluid levels caused by calcium layering in cystic components and may be detected in 50-80% of cases [1, 5]. Our case showed no evidence of sedimentation sign, possibly due to low activity of the lesion.

There are some imaging mimics for our case. Calcinosis universalis usually presents as diffuse, sheetlike calcified depositions involving subcutaneous tissues and muscles. Calcinosis circumscripta is described as firm, white dermal papules, plaques, or subcutaneous nodules [1]. In our case, the solitary character of the lesion excludes the possibility of these multiple lesions.

Myositis ossificans is a mass composed of het-
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erotic bone and cartilage formation located within muscles, and there is usually history of trauma [5]. Calcific tendinitis refers to hydroxyapatite deposition within tendons and tendon sheaths. Synovial osteochondromatosis is defined as proliferative intrasynovial nodules of cartilage and bone. Synovial sarcoma may form punctate calcifications and may ossify, but usually involving only a portion of the tumor [5]. Parosteal osteosarcoma presents as dense sclerotic masses and there should be a connecting stalk between cortical surface and adjacent soft tissue [1, 5]. They seldom present as a mass without bony or cartilage involvement which was shown in our case.

Extraskeletal osteosarcoma may manifest as calcified soft tissue masses, therefore biopsy is required for differential diagnosis in our case [1, 5]. In our case, lesions containing white to pale yellow chalky materials at surgery and histological findings suggesting epithelioid elements and multinucleated giant cells surround calcium granules definitely confirmed the diagnosis of TC [1, 2, 5]. The progression of TC is quite slow and surgical excision is indicated if symptomatic [1, 2]. Incomplete resection may cause a high recurrent rate of 70-80%. Our patient did not have recurrence in his 1 year follow-up, indicating successful treatment [4].

In conclusion, we report a surgically proved case of tumoral calcinosis as well as the imaging features and possible differential diagnosis.

REFERENCE

電腦斷層上位於右側肩胛骨下區的腫瘤性石灰沉著：病例報告

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腫瘤性石灰沉著為造成關節週邊組織腫瘤性鈣化的少見疾病。病灶通常在股、肘及肩等關節，位於肩甲骨下區則相對少見。因此報告一有慢性腎衰竭已洗腎十年的個案，其主訴為右背側患有一硬塊，於三年間逐漸成長，胸部X光及電腦斷層可見右肩甲骨下區有大型鈣化腫瘤。手術切除成功證實為腫瘤性石灰沉著且追蹤一年無復發跡象。