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Case Report

Scleredema of Buschke: a report of 2 cases

Buschke 氏硬腫病例兩宗

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A 59-year-old Chinese male presented with 6 months history of gradual development of thickened skin over nape of neck and back. Another 34-year-old Chinese male had more extensive hardening of skin over nape of neck and then extended to the upper back, shoulder, arms, chest wall, face and upper thigh for eight years. They were otherwise asymptomatic. Histopathology from the biopsy of the skin lesions in both patients confirmed scleredema. Diabetes mellitus and paraproteinaemia were found in them respectively. The second patient in this report is the first case of Scleredema of Buschke associated with paraproteinaemia reported in Hong Kong.

59 歲華人男患者 6 個月來於其後頸及背部逐漸出現皮膚增厚。另一名 34 歲華人男患者 8 年來於其後頸，繼而其上背、肩、臂、前胸、面部及大腿皮膚出現廣泛硬化。兩名患者均無其他症狀。皮膚組織學檢查確診為Buschke 氏硬腫病。兩名患者分別患有糖尿病及副蛋白血症。本報告中第二名患者是本港首宗 Buschke 氏硬腫病伴有副蛋白血症的病例。

Keywords: Diabetes mellitus, Paraproteinaemia, Scleredema (Scleredema of Buschke)

關鍵詞：糖尿病，副蛋白血症， Buschke 氏硬腫病

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Introduction

Scleredema, also called scleredema of Buschke, is an uncommon fibromucinous connective tissue disorder of unknown cause. It belongs to a group of scleroderma-like disorders which is characterised clinically by wooden-like, non-pitting indurated change of skin, usually involves the neck, shoulders, trunk and face. Systemic involvement is rare. Scleredema has been found to be associated with febrile illness, diabetes mellitus and paraproteinaemia. We report two Hong Kong Chinese patients with scleredema, one with diabetes mellitus and another with paraproteinaemia respectively.

Case report

Patient 1

A 59-year-old Chinese male was first seen in Aug 2005 because of gradual development of thickened skin over nape of neck and back for 6 months. He was otherwise well with no joint pain, dyspnoea or dysphagia. He had hypertension, ischaemic heart disease with percutaneous transluminal coronary angioplasty done 2 years ago and benign prostatic hypertrophy. He was on regular medications including aspirin, metoprolol, simvastatin and prazosin. Family history was unremarkable.

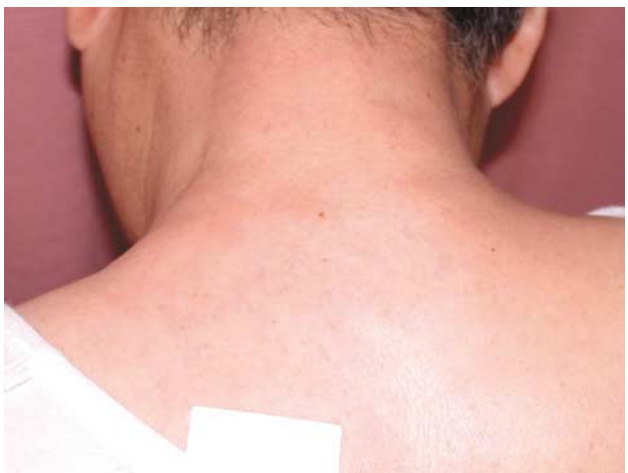

Figure 1. Ill-defined non-pitting indurated plaque over the nape of neck and upper back of the patient. There was mild erythema.

Physical examination showed ill defined non pitting indurated plaque over nape of neck and upper back with mild erythema (Figure 1). There was no limitation in neck or shoulder movement. The remaining examination was normal.

Blood was taken for this patient and fasting blood glucose was found to be elevated, 7.1 mmol/L (3.6-6.1 mmol/L). IgA was mildly raised to 4.07 g/L (0.68-3.78 g/L), IgM and IgG were normal at 0.65 g/L (0.60-2.63 g/L) and 13.8 g/L (6.9-16.2 g/L) respectively. Paraprotein was not detected. Other blood investigations including complete blood picture, renal and liver function tests were all normal. An incisional skin biopsy showed thick dermis with thickened collagen bundles which were separated by clear spaces. The sebaceous gland was located in the upper dermis. There appeared no obvious increase in fibroblasts and little inflammatory cells present. The collagen did not appear homogenised and hyalinized (Figure 2). Alcian blue stain showed some interstitial mucin in the dermis (Figure 3). These findings were compatible with scleredema.

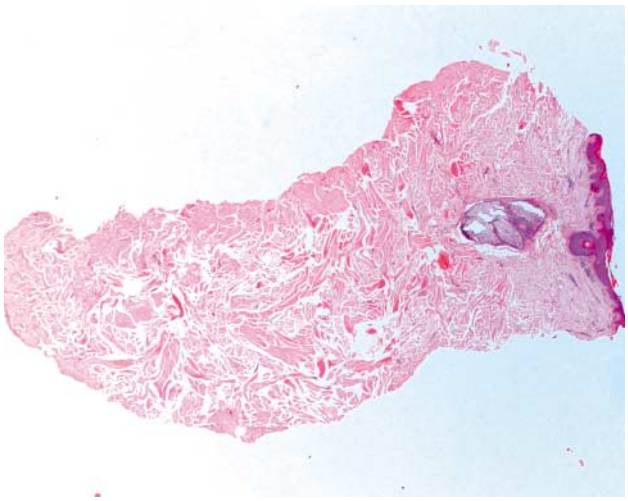

Figure 2. Objective 2.5x. The dermis is thickened by increased amount of collagen fibers.

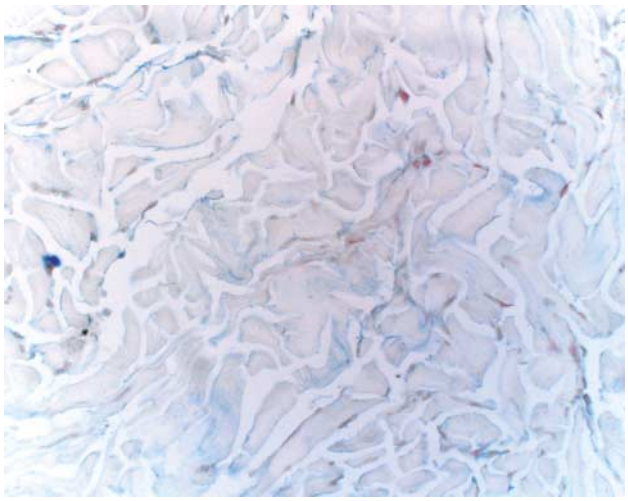

Figure 3. Alcian blue stain. There is a small amount of mucin in the widened spaces among the collagen bundles.

Patient 2

A 34-year-old Chinese male present with diffuse hardening of skin over nape of neck and extended to the upper back, shoulder, arms and chest wall for 8 years. The upper thigh and face were involved later with milder severity. He was otherwise asymptomatic with no joint pain, dysphagia and Raynaud's phenomenon.

Physical examination revealed diffuse wooden hard induration of skin over nape of neck, upper trunk and proximal upper and lower limbs with limited neck and shoulder movement (Figure 4). No area of erythema or hyperpigmentation was noted. There was no restriction of chest expansion. There was no evidence of calcinosis, sclerodactyly or telangiectasia.

Blood test revealed elevated IgG 17.1 g/L (6.94-16.18 g/L), normal IgA 2.61 g/L (0.68-3.78 g/L) and normal IgM 0.70 g/L (0.60-2.63 g/L). IgG Lambda paraprotein of 10.4 g/L was detected. Bence-Jones protein was not found in urine. Fasting glucose was normal at 4.2 mmol/L (3.6-6.1 mmol/L). Other blood investigations including complete blood picture, renal and liver function tests, anti-nuclear antibody and rheumatoid factor were all normal. Bone marrow examination including aspirate, clot and trephine showed normal trilineage haemopoiesis. Skin biopsy showed similar features as in patient 1 (Figures 5 & 6).

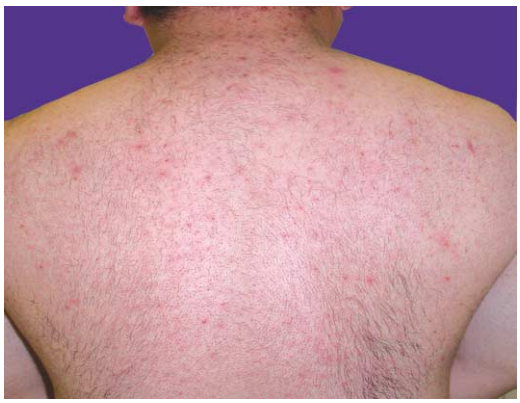

Figure 4. Diffuse hardening of skin over nape of neck and extended to the upper back and shoulder.

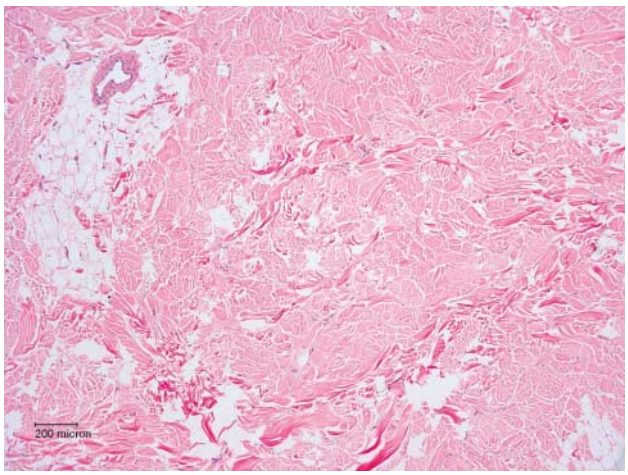

Figure 5. H&E stain. Thickening of dermis with collagen extending into the subcutis. The collagen fibers are of near-normal appearance. Note the absence of inflammatory component.

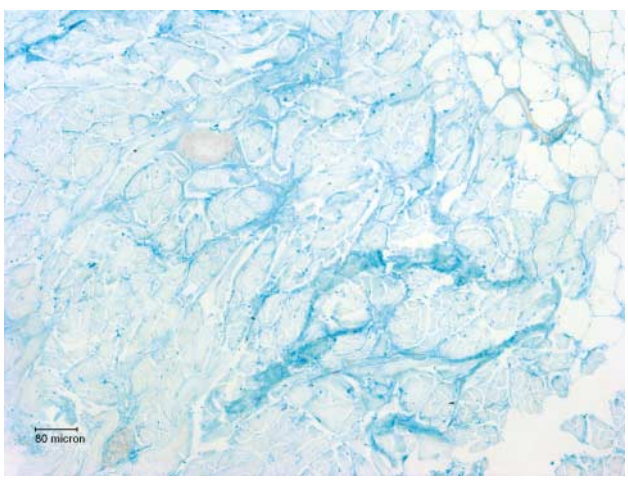

Figure 6. Alcian blue stain. Dermal mucin is increased.

Discussion

Scleredema is a rare connective tissue disease with increased amounts of collagen and glycosaminoglycans. It is a scleroderma-like disorder, which is frequently misdiagnosed as systemic sclerosis. It can be differentiated from systemic sclerosis by skin involvement clinically, usually lack of systemic features, scleroderma-specific autoantibodies, Raynaud's phenomenon and nailfold capillary morphologic abnormalities.

Scleredema can be classified into three distinct clinical subgroups according to the associated causes. Group 1 consists of predominantly paediatric patients with onset preceded by a febrile illness, particularly streptococcal infection such as tonsillitis, pharyngitis, scarlet fever and cellulitis.[1] Viral infections like influenza, cytomegalovirus, measles, pertussis, mumps and diphtheria are also reported. The condition runs an acute onset, benign course, excellent prognosis and spontaneous resolution within 2 years. Patients in group 2 have no prior history of febrile illness and they may have associated systemic disorders such as paraproteinaemia, multiple myeloma, rheumatoid arthritis, Sjogren's syndrome, or hyperparathyroidism. The onset is more insidious and it has longer duration over a period of years. Group 3 patients present with long-standing scleredema associated with type 2 diabetes mellitus. They tend to have an unremitting course. Patient 1 and 2 in our present report can be classified into the third and second group respectively. The first type of scleredema accounts for about 60% of cases according to one study.[2] In Hong Kong, Leung and Chong reported 12 cases of scleredema, in whom 10 (83%) of them had diabetes mellitus; 8 (80%) of them developed diabetes as adults. Five (50%) of the 10 patients were treated using insulin, 4 (40%) were treated with oral hypoglycaemic agents, and one (10%) was treated by dietary control.[3] Recent study suggested that diabetes was an important associated factor and was tend to be underreported. Type 1 or type 2 diabetes may be associated with scleredema of Buschke in more than 50% of cases.[4]

Scleredema is characterised by ill defined, woody, non-pitting, indurated plaques with or without erythema, hyperpigmentation, or a peau d'orange appearance. Upper part of the body is usually affected and the lesion often starts from the nape of neck. Seventy-five percent of scleredema patients have neck involvement,[3] then extends to the anterior aspects of the neck, face, upper chest and back. In extensive cases, patient may complaint of difficulty in opening their mouth and result in dysarthria. Tongue involvement is reported in scleredema. Activity of daily living may be affected because of skin involvement over joint areas. Extracutaneous involvement, including oesophagus, heart, pleurae, skeletal muscles and eyes with periorbital oedema, restricted motility and sicca syndrome,[5] have been reported rarely.

The diagnosis of scleredema is readily confirmed by histopathology. Blood test including complete blood picture, serum protein electrophoresis, fasting blood glucose, throat swab and antistreptolysin-O titers should be performed. For those with long-standing scleredema, serum electrophoresis done at regular intervals during follow-up is useful in detecting blood dyscrasias that may occur in association with scleredema.

Currently, there is no effective treatment available for scleredema. Physicians have to identify and treat any underlying disease such as infection, diabetes mellitus and paraproteinaemia. Treatment modalities include electron beam therapy,[6-7] psoralen in the form of oral,[8] cream[9] and bath[10] with ultraviolet light A, high dose penicillin,[11] cyclosporine,[12] extracorporeal photopheresis,[13] low-density lipoprotein apheresis[14] and chemotherapy with oral melphalan and prednisolone[15] are shown to be effective in individual cases or small series only.

The prognosis of scleredema is variable. For those of infection associated, most will resolve spontaneously within 2 years. Patients of other groups usually run a remitting course over many years. Most of the cases have limited skin involvement without affecting their daily life. To our knowledge, patient 2 with paraproteinaemia is the first reported case of scleredema of Buschke associated with paraproteinaemia in Hong Kong. Paraproteinaemia, also known as monoclonal gammopathy, is characterised by clonal proliferation of plasma cells that produced homogeneous immunoglobulin protein.[16] The paraproteinaemia in patient 2 can be classified

as Monoclonal Gammopathy of Undetermined Significance (MGUS). Since 25% of patients with MGUS are associated with haematological malignancies in 20 years,[16] all patients with MUGS should be monitored for multiple myeloma, Waldenstrom macroglobulinaemia or other lymphoproliferative malignancies.

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