A Case of Fibrolipoma

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Fibrolipoma is an uncommon variant of lipomas which shows a distinct pathologic findings with both component of mature adipose cells and broad bands of dense fibrous connective tissue. A 30-year-old woman developed an 5x7cm sized, indurated, ill-defined, subcutaneous mass on the right axilla. Microscopically, the tumor contained broad bands of dense connective tissue with mature adipose tissue scattered throughout the mass, but it did not show encapsulation. The lesion was excised and she showed no evidence of recurrence after 6 months of follow-up. (Ann Dermatol 9:(1)69~72, 1997).

Key Words : Fibrolipoma

Lipoma is a benign tumor originating from the mesenchyme in which proliferation of normal adipose cells can be observed histologically[1,2]. Fibrolipoma is a histological variant of lipoma and involves not only the proliferation of adipose cells but proliferation of the supporting fibrous tissue as well[1,3]. Lipoma can be seen frequently in the dermatologic field but its variant, fibrolipoma, is rarely mentioned in the statistical reports involving skin tumors or lipomas[4-9]. Fibrolipomas are uncommon in the dermatologic field and since not a great deal is known about the disease, we present a case of fibrolipoma with a review of the literature.

REPORT OF A CASE

In February 1995, a 30-year-old woman presented with a mass in the right axillary area. The patient noticed a 3x4cm sized, palpable mass 15 years ago. The mass slowly enlarged during the last two to three years accompanied by slight tenderness. Her past medical history was unremarkable. On physical examination, there was a 5x7cm sized, indurated, ill-defined subcutaneous mass with a relatively smooth surface on the right axilla (Fig.1). Routine laboratory studies were within normal limits or negative. Histologically, hematoxylin-eosin stain of the biopsy specimen taken from the mass revealed ill-defined mass composed of eosinophilic dense connective tissue bands with mature adipose cells scattered throughout the mass (Fig.2,3). To elucidate whether the broad eosinophilic dense bands were collagen or muscle fibers, we performed a Masson's trichrome stain, which revealed that the eosinophilic bands were collagen fibers staining a deep blue color (Fig.4). The patient was referred to a plastic surgeon for total excision of the mass and she showed no evidence of recurrence after 6 months of follow-up.

DISCUSSION

Fibrolipoma is known to be uncommon variants of lipoma[1-3] but the pathogenesis, prevalence, and predilection sites have not been clearly determined. Generally, lipoma is a well-circumscribed encapsulated tumor of adipocytes that are separated by groups of fine collagen septa[2]. When the amount of fibrous tissues increases substantially and the tumor is composed entirely of mature adi-

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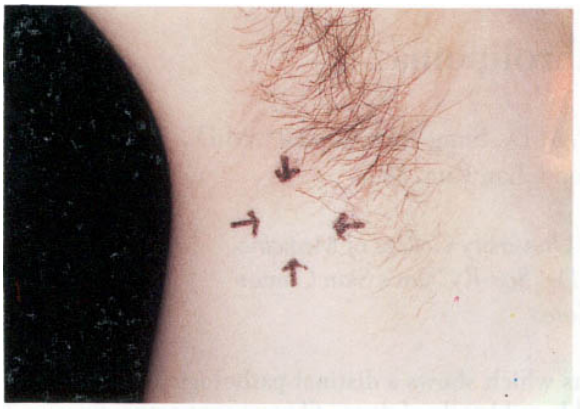

Fig. 1. A 5×7cm sized, mild tender, indurated ill-defined subcutaneous mass on the right axilla.

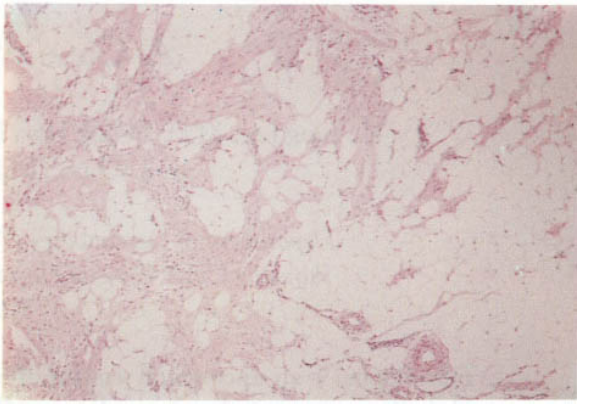

Fig. 2. The tumor shows both fibrous and adipose elements, but it does not show encapsulation (H&E stain, ×40).

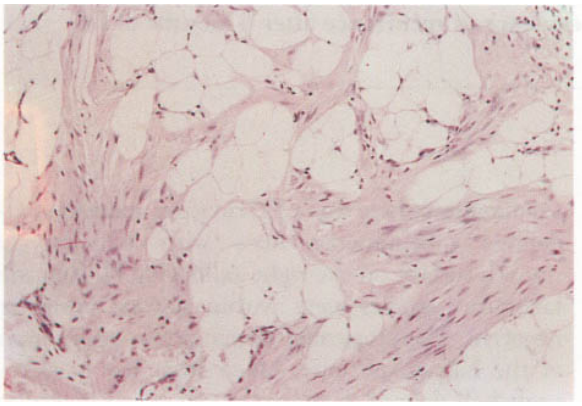

Fig. 3. Histopathologic findings show broad bands of dense connective tissue with mature adipose cells scattered throughout the tumor (H&E stain, ×100).

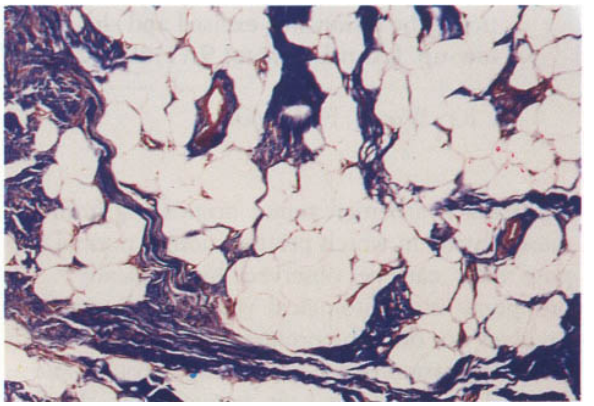

Fig. 4. The broad bands are stained deep blue with Masson's trichrome stain and are proven as collagen bundles (Masson's trichrome stain, ×100).

pose cells and broad bands of dense connective tissue, it is then called a fibrolipoma which is usually not encapsulated unlike ordinary lipoma[1,3,10-13].

Kim et al[5]. reported 121 cases of subcutaneous lipomas composed of ordinary single lipomas, angiolipomas, and fibrolipomas in which fibrolipomas showed a prevalence of 9.1%(10 cases). Han et al[4]. reported a study of 1302 cases of skin tumors among which fibrolipoma consisted 0.3%(3 cases) of the total cases and 1.5% of the 201 cases of lipoma. However, most of the other studies on skin tumors[6-9] show no report on fibrolipomas.

Embryologically, fat cells begin to appear within the subcutaneous tissue during the fifth month of intrauterine life. At the same time, fibroblasts become apparent among the predominantly undifferentiated mesenchymal cells. A preadipose cell is morphologically indistinguishable from a fibroblast, but indirect evidence suggests that these two cells are distinct entities. Normally, fibroblasts proliferate throughout the body whereas fat cells show developmental specificity for certain areas such as the subcutaneous tissues, the omentum, and the retroperitoneal space[1,2].

The histogenesis of lipomas is uncertain, and various factors have been implicated in their origin, including chronic infection, trauma, familial disorders, and developmental defects, all of which contribute to the dearrangement in the differentiation and proliferation of the two types of cells. The pathogenesis of fibrolipomas, which is a variant of lipoma, has also never been clearly determined. These neoplasms are thought to be congenital, caused by endocrinologic imbalance, or to be the

product of a degenerated fibromatous tumor. Finally, it is possible that these tumors arise from the maturation of another tumor, lipoblastomatosis[1]. Our case demonstrated no remarkable family or trauma history, nor any endocrinologic or medical past history. Our patient had an asymptomatic mass of 15 year duration which slowly enlarged during the last 2-3 years accompanied by slight tenderness. Therefore, we can assume that her mass was the result of the maturation of a adipose tissue or the product of a degenerated fibromatous tumor, rather than congenital or endocrine imbalance.

Histologically, fibrolipomas contain broad bands of dense connective tissue with mature adipose cells scattered throughout the mass[1,13]. Occasionally the connective tissue can become hyalinized or the tumor may not be encapsulated[2]. Our case also showed no encapsulation but the whole tumor mass was composed of mature adipose cells and broad bands of connective tissue. By a Masson's trichrome stain which was performed to elucidate whether these dense connective tissue bands were collagen or muscle fibers, we were able to confirm them as collagen.

Tumors that show adipose and fibrous components such as lipoma, spindle cell lipoma, subdermal fibrous hamartoma, lipoma associated with smooth muscle hamartoma, and sclerosing liposarcoma should be included in the differential diagnosis. Lipoma can be differentiated from fibrolipoma because of its absence of the broad connective tissue band[2,14] and spindle cell lipoma has more cellularity with absence of dense fibrous bands[12,15,16]. Subdermal fibrous hamartoma can be differentiated because of its presence of foci of immature mesenchyme[17], and the dense fibrous bands of lipoma associated with smooth muscle hamartoma are stained dark red, not deep blue[2,18]. Also, in sclerosing liposarcoma, bizarre cells observed in the fibrous tissue can be a characteristic finding that differentiates it from fibrolipoma[3].

In conclusion, fibrolipoma is an uncommon variant of lipomas which shows distinct pathologic findings with both components of mature adipose cells and broad bands of dense fibrous connective tissue.

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