A Case of Cytophagic Histiocytic Panniculitis

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Cytophagic histiocytic panniculitis(CHP) is a histiocytic disorder that was first described by Winkelmann and Crotty in 1980. We have recently experienced a case of CHP is a 21-year-old female who had developed recurrent fever and erythematous tender subcutaneous nodules, progressing to liver dysfunction and hemorrhagic diathesis. Histopathologically, infiltrates of large cytophagic histiocytes lacking atypia were present in the subcutis. Hemophagocytic histiocytes were observed in the bone marrow. Immunohistochemical studies were performed, and revealed positive immunoreactivity for lysozyme and T cell marker in the subcutaneous inflammatory lesions. (Ann Dermatol 3:(2) 133-137, 1991)

Key Words : Bean bag cell, Cytophagic histiocytic panniculitis.

Cytophagic histiocytic panniculitis(CHP) which is described by Winkelmann and Crotty,[1] is characterized by recurrent subcutaneous nodules, fever, pancytopenia, and abnomal liver function. This entity is differentiated from malignant histiocytosis(MH) by a prolonged chronic course and the absence of histologic nuclear atypia in the dermal and subcutaneous infiltrate. Despite the benign appearence of the histiocytic infiltrate, the mortality rate is reported to be high due to complications of disseminated intravascular coagulopathy.

In Korea, several cases of CHP which developed in children were reported.[13,14,15,16]

Our patient with CHP demonstrated many clinical features observed in the previously described patients, and confirmed the histiocytic origin of the disease with the use of immunohistochemical techniques.

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REPORT OF A CASE

A 21-year-old woman presented in October of 1990 with a 3 month history of fever to 38℃ and multiple subcutaneous nodules and tender purpuric areas on the thighs, abdomen, chest, upper arm, and periocular area(Fig. 1).

Physical examination revealed a well-developed woman in no acute distress. There were no objective signs of lymphadenopathy, or hepatosplenomegaly.

Abnormal laboratory studies included peripheral white blood cell count 3,800/㎣ with 72% neutrophils, 12% lymphocytes, 4% monocytes, 2% eosinophils, 10% basophils, and a platelet count of 79,000/㎣. The aspartate aminotrans-

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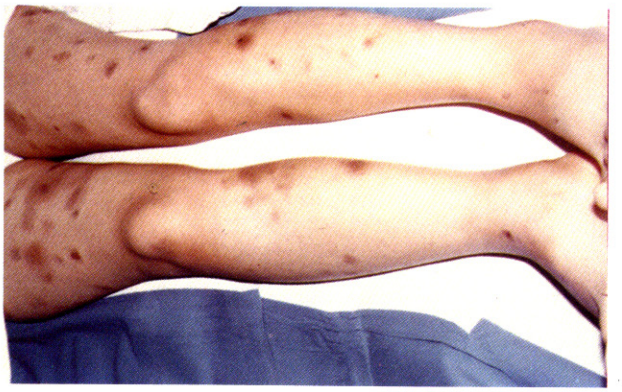

Fig. 1. Mutiple erythematous indurated plaques and subcutaneous nodules on the both thigh and leg.

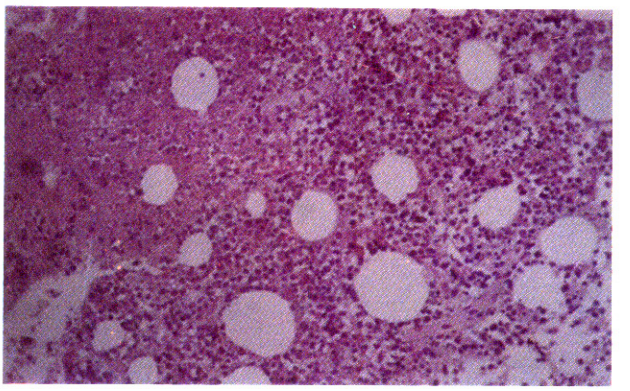

Fig. 2. Histopathology showing the lobular panniculitis and focal necrosis with lipophagic cells(H & E stain, ×100).

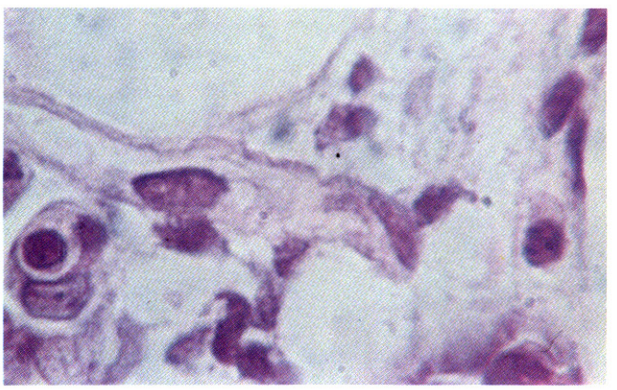

Fig. 3. Skin biopsy specimen demonstrating characteristic "bean bag" cells in subcutaneous fat(H & E stain, ×1000).

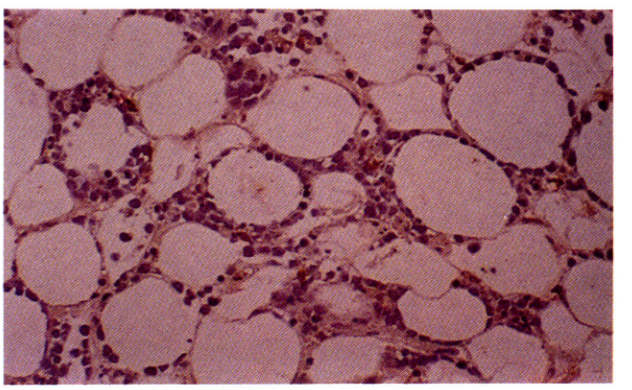

Fig. 4. Immunoperoxidase staining of a phagocyte with antilysozyme antibody(×400).

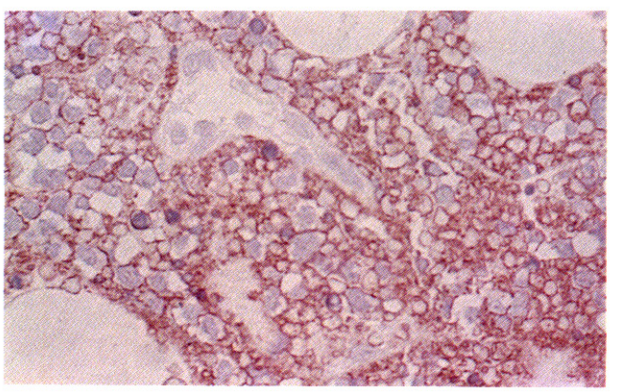

Fig. 5. Infiltrating cells of the subcutaneous tissue are positive for T-cell marker(×400).

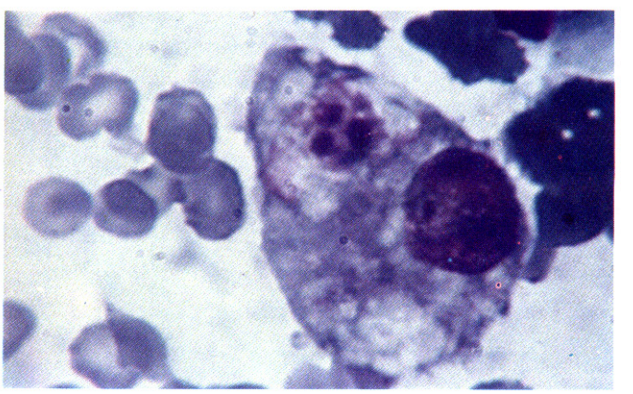

Fig. 6. Cytophagic histiocytes in bone marrow(H&E stain, ×1000).

ferase was 145U/L ; alanine aminotransferase, 51U/L ; lactate dehydrogenase, 175U/L, and erythrocyte sedimentation rate, 32㎜/h. The hemoglobin, ASO, amylase, RA, ANA, immunoglobulins, serum protein electrophoresis, Coomb's test, LE test, anti-DNA, C3, C4, EKG, roentogenograms of the chest & abdomen were all with in normal limits or negative. Blood and urinary bacteriologies were negative.

Skin biopsy from the right thigh lesion showed a dense infiltrate of histiocytes, lymphocytes, and occasional plasma cells with focal necrosis and hemorrhage in the deep dermis and subcutaneous fatty tissue.(Fig 2). Some of the histiocytes were stuffed with phagocytized erythrocytes, resembling a "bean bag cell". Nuclear atypia was not observed(Fig. 3). Immunohistochemical studies were performed for lysozyme and T cell markers with the avidin-biotin-peroxidase complex method. The large mononuclear cells positive cytoplasmic reactivity with lysozyme(Fig. 4). Small round lymphocytes and atypical mononuclear cells within the subcutaneous fat and around deep vessels were reactive with T cell markers(Fig. 5).

A bone marrow aspirate showed a normocellular marrow with infiltrates of cytophagic histiocytes. Nuclear atypia was observed, but was not prominent(Fig. 6).

One month later, new subcutaneous nodules appeared with fever of 39℃. Laboratory abnormalities included a leukocyte count of 1,100/㎣, a hemoglobin level of 7.2 g m/dℓ, platelet count of 49,000/㎣, and elevated liver function test. Coagulopathy was manifested by a prolonged prothrombin time, partial thromboplastin time, and by a decreased fibrinogen level. Fever, nausea & vomiting persisted and later, gastrointestinal bleeding and respiratory complications occurred.

One week later, the patient died of uncontrolled bleeding. No autopsy was performed.

DISCUSSION

Crotty and Winkelmann's original cases of CHP all presented with fever and subcutaneous nodules.[1,2] Laboratory abnormalities included mild leukopenia, anemia, thrombocytopenia, and elevated hepatic enzymes. At autopsy histiocytic infiltrates were found in the subcutaneous tissue, lymph nodes, spleen, liver, bone marrow, mammary tissue, heart, lung, mesentery, and gastrointestinal tract. The duration from onset of symptoms to death ranged from 6 months to 10 years(Table 1). Histopathologically the disease was characterized by a dense infiltrate of cytologically benign histiocytes predominantly in the subcutaneous tissue. They coined the term "bean-bag cells" for those histiocytes involved in phagocytizing erythrocytes, leukocytes, platelets, and nuclear debris. The clinical and histopathologic features of our case were consistent with the diagnosis of CHP (Table 1).

The only entity other than CHP which combines both clinical and histopathologic features of a recurrent panniculitis and cytophagocytosis is malignant histiocytosis(MH).[3,4,5,6] Although the clinical features of CHP and MH overlap, histologic evaluation reveals predominantly atypical bizzare histiocytes in most cases of MH.

The origin of histiocytic neoplasia is controversial. Recent studies using monoclonal antibody techniques and T cell receptor rearrangement techniques have shown that some histiocytic neoplasms with hemophagocytosis, such as MH and regressing atypial histiocytosis, to be of T cell origin.[7,8,9] An association between T cell lymphoma and erythrophagocytic cells has been observed previously.[10,11] Jaffe et al[10] described six patients with a peripheral T cell lymphoma with coexistent but histologically segregated populations of nonerythrophagocytic malignant T cells and benign appearing

Table 1. Description of cases of histiocytic cytophagic panniculitis.

	Present case	Alegre & Winkelmann (review of 19 cases)	Reported in Korea (4 cases)
Age at onset	21yr	44yr(23−81yr)	9.2yr(5−12yr)
Sex	F	F:13, M:6	F:1, M:3
Duration	0.3yr	5.5yr(0.1−27yr)	5.4yr(0.1−11yr)
Location of lesions			
Trunk	+	47%	All :+
Extremities	+	89%	All :+
Face	+	16%	2 cases:+
Ecchymosis	+	53%	All :+
Ulceration	+	32%	2 cases:+
Systemic involvement			
Fever	+	74%	All :+
Hepatosplenomegaly	−	47%	3 cases:+
Adenopathy	−	26%	3 cases:+
Laboratory finding			
Anemia	+	58%	3 cases:+
Leukopenia	+	84%	All :+
Coagulation abnormality	+	53%	All :+
Liver enzymes increased	+	58%	All :+
Histopathology			
Skin	+	100%	All :+
Bone marrow	+	50%	2 cases:+
Liver	NA	14%	NA
Spleen	NA	56%	NA
Lymph node	NA	58%	1 case :+

+ :occurrence or phagocytic histiocyte present
N :no histiocytic infiltration
NA:no data available

erythrophagocytic histiocytes. Jaffe et al[10] postulated that the erythrophagocytic histiocytosis syndrome associated with T-cell lymphoma is secondary to stimulation of macrophages by lymphokines produced by neoplastic T cells.

Our immunohistochemical studies showed the presence of a high percentage of benign well-differentiated & atypical mononuclear cells in the cutaneous lesions of CHP. Thus, it is possible to suggest that CHP may be a reactive process in responce to an underlying T cell proliferation, or a T cell disorder itself.[12] Although the relationship between the panniculitis and the other abnormalities is not clear, it is likely that a better understanding of this relationship will clarify the pathogenesis of this and other forms of panniculitis. The application of new techniques in newly diagnosed cases will be of value in clarifying the immunophenotype of the cells.

In conclusion, this report describes a patient who presented with a recurrent panniculitis which histologically showed prominent histiocytic cytophagocytosis.

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