

Imaging diagnosis

Case 445

1. Inflammatory granuloma

【Progress】

He was scheduled open surgery to take out the whole lesions from perirenal space to skin surface at the right lateral abdomen.

【Discussion】

Granuloma is histologically composed of histiocytes, epithelioid cells, and giant cells in the center, and lymphocytes, plasma cells and fibrocytes (1,2). Histiocytes are thought to come from macrophages but they lose the function of phagocytes but secretory function (1). Epithelioid cells are active type of histiocytes that indicate both of histiocytes and epithelioid cells are derived from macrophages. Histiocytes and epithelioid cells are referred to be the transformed cells of macrophages (1, 2). Namely, granuloma is the resultant from mainly innate immunity with addition of adaptive immunity to eliminate the pathogen.

Granuloma is caused by infection arisen from bacteria, mycosis, parasites, and non-infection arisen from sarcoidosis, autoimmune disease, drug, foreign body (2-4).

Granuloma is categorized into necrotic granuloma, non-necrotic granuloma, suppurative granuloma, diffusely infiltrative granuloma and foreign body reaction granuloma (2). As necrotic granuloma, tuberculoma and non-tuberculous mycobacterium are listed (2-4). As non-necrotic granuloma, sarcoidosis is listed (2-4). As diffusely infiltrative granuloma, immune diseases such as rheumatoid arthritis. Suppurative granuloma is related not only to macrophages but also to neutrophils against bacteria inducing to form an abscess.

Granuloma caused by dropped gall stones is reported as laparoscopic cholecystectomy is prevailed (5-7). In fact, the documents about dropped-gall stone-granuloma were least reported in time of open surgery. The dropped gallstones are retrieved in 5.4% to 19% under laparoscopic control that indicates difficult to retrieve because of the limited vision field (5-7). Further, trocar used during laparoscopic surgery is risky to injure the gall bladder mural (5).

In our case, granuloma might be formed in the process of elimination of dropped gall stones containing small bacteria as the form of necrotic granuloma or suppurative granuloma. Dropped gallstone granuloma is reported to occur in the incidence of 0.08-2.9% after total laparoscopic cholecystectomy and of 20% in the gall stone dropped cases (5-7). The pigmented stones cause to form the granuloma more predominantly than cholesterol stones. The dropped gallstone granuloma is formed after 4 months to 10 years (5-7). The risk factors of forming granuloma are the stone size of 1.5cm or greater and the stone number of 15 or more (5-7). The longer time of persistent inflammation induce to form fistula from intraperitoneal space to extraperitoneal space such as abdominal wall, diaphragm, retroperitoneal space, and digestive organ.

In our case, dropped gallstone granuloma was formed nine months after laparoscopic cholecystectomy, extending from subhepatic space to perirenal space at left side and to skin surface through intercostal muscle and subcutaneous tissue.

【Summary】

We presented a seventy-nine-year-old male presented with swollen skin abscess at right lateral upper abdomen. He previously received laparoscopic cholecystectomy nine months ago. The soft tissue mass corresponded to necrotic granuloma or suppurative granuloma from perirenal space to skin surface via subhepatic space costal muscles and subcutaneous tissue. It is borne in mind persistent inflammatory granuloma forms fistula extending to retroperitoneal space to skin surface to eliminate dropped gallstones.

【References】

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2026.8.28