Sister Mary Joseph’s nodule and inguinal nodal metastases; a case report and literature review

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Abstract Umbilical metastases from intraperitoneal malignancies are universally referred to Sister Mary Joseph’s nodule (SMJN). The most frequent primary sites include the stomach and ovaries. SMJN caused by colon cancer is very uncommon. Likewise, carcinoma of the right side colon metastasizing to inguinal lymph nodes is considered almost impossible. To the best of our knowledge, no report of right side colon cancer synchronously involving both the umbilicus and inguinal lymph nodes is available. We present a case of right side colon cancer (RSCC) metastasizing to the umbilicus and inguinal lymph nodes, which was confirmed by pathology and immunohistochemistry.

Key words: Colon neoplasm, Sister Mary Joseph’s nodule, umbilical metastasis, inguinal lymph node

1 Case description

A 37-year-old man was admitted to the Second Affiliated Hospital of Soochow University for intermittent abdominal pain and bloody stools for one year. Three months before, enlargement of pre-existing inguinal lymph nodes with mild dull pain was noted in bilateral inguinal regions. Two weeks before, a painless mass in the umbilicus was accidentally palpated. Physical examination revealed an umbilical mass, 2 cm in diameter, with slightly reddish skin. The mass was hard and fixed to the abdominal wall. Multiple lymph nodes with mild tenderness were palpable in bilateral inguinal regions. The nodes were confluent and slightly movable with a maximal diameter of 2.5 cm. Under colonoscopy, a proliferative lesion in the hepatic flexure of the colon was discovered and further observation of the proximal colon was hampered by luminal stricture caused by the lesion. On CT scans, mural thickening of the
ascending colon and cecum, intumescent intra-abdominal, retroperitoneal and bilateral inguinal lymph nodes, filling defect in the hepatic flexure and cystic lesions of the liver, and an enhanced umbilical mass with obscure border were observed (Figure 1). The level of serum carcinoembryonic antigen (CEA) was elevated (55 ng/mL). This case was diagnosed preoperatively as colon carcinoma with umbilical metastases, and inguinal nodal metastases was suspected. Due to severe intestinal spasm and bloody stool, the patient insisted on surgical treatment, though systematic chemotherapy was suggested. Right hemicolectomy and resection of the umbilical mass were performed through a median abdominal incision. Excision of the enlarged lymph nodes of the right groin was performed for biopsy. Abdominal exploration revealed miliary dissemination in the Douglas pouch and carcinous infiltration in the right diaphragm. No obvious metastatic loci were detected on the surface of the liver. Pathologic examination confirmed colon adenocarcinoma as well as umbilical metastasis and inguinal lymph node metastasis (Figure 2). Immunohistochemical analysis with anti-CEA and anti-CK20 antibodies revealed positive staining of tumor cells from the above three sites (Figure 3). This case was diagnosed as stage IV disease and chemotherapy was recommended. However, the patient refused further therapy and died four months after operation.

2 Discussion

2.1 Umbilical metastasis from colon cancer

Cutaneous metastases to the umbilicus are universally referred to as Sister Joseph’s (or Sister Mary Joseph’s) nodule (SMJN)\(^1\)\(^-\)\(^2\). Though uncommon, SMJN is well documented and generally regarded as an unfavorable prognostic sign with survival ranging from 2 to 11 months from the time of initial diagnosis in untreated patients\(^3\)\(^-\)\(^5\). The primary lesions are mostly discovered in the stomach and ovary, whereas colon cancer seldom spreads to the umbilicus. The first report of umbilical metastasis from colon cancer was published in 1846 by Walsh. In a review by Shetty\(^4\), 265 cases of metastatic tumors of the umbilicus were reported from 1830 to 1989, among which 17 cases were found to be originated from colon cancer. Galvan\(^5\) summarized the characteristics of 407 umbilical metastases from 1966 to 1997 and found that 14.6% of all