

## Small Intestinal Perforation Caused by Metastasis from Squamous Cell Carcinoma of Scalp—One Case Report

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Received November 22, 2010; accepted December 12, 2010.

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**ABSTRACT** The small bowel metastases from head and neck regions are extremely rare. The diagnosis and treatment of such kind of small bowel metastases remain unclear. This paper reports on a 53-year-old case with small intestine perforation caused by metastasis from squamous cell carcinoma of scalp. After surgical treatment, the patient had a relatively better survival. This paper shares the clinical experience we have learned from managing this patient in hope that it will help other medical professionals in oncology to recognize the disease.

**KEY WORDS:** neoplasms, metastasis, perforation, small intestine, squamous cell carcinoma, treatment.

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### Introduction

Small intestinal malignant tumors account for less than 10% of all gastrointestinal neoplasms<sup>[1]</sup> and most of them are secondary tumors arising from either an intra or extra-abdominal primary site<sup>[2]</sup>. However, tumors in the head and neck regions are the rarely extra-abdominal primary sites that metastasize to the small bowel. This paper reports on a rare case of small intestinal perforation caused by metastasis from squamous cell carcinoma of the scalp.

### Case Report

A 53-year-old man presented to the emergency surgery department of The First Hospital of Harbin complaining of acute onset of diffuse abdominal pain that began approximately 14 h before. He had several episodes of nausea and vomiting before presentation and denied diarrhea, hematochezia, melena or other changes in bowel habits.

The patient had received surgical treatment for his scalp cancer half a year before presentation. Squamous cell carcinoma of the scalp had been diagnosed through post-operative pathological examination. The patient had then received radiotherapy after the operation. There hadn't had any history of gastric or duodenal ulcers before presentation.

The patient appeared in obvious distress during the physical examination. The physical examinations showed heart rate of 124, blood pressure of 165/115 mmHg and respiration rate of 21. The abdomen was boardlike with acute diffuse tenderness and notable rebound ten-

derness. Moreover, the bowel sounds were absent.

Laboratory tests showed that white blood count was elevated to  $25.5 \times 10^9/L$  (89.3% neutrophils, 6.7% lymphocytes) and the changes in electrolytes, urinalysis, and coagulation factors were unremarkable. The chest x-ray was negative, but an upright abdominal X-ray showed abdominal free air beneath the diaphragm.

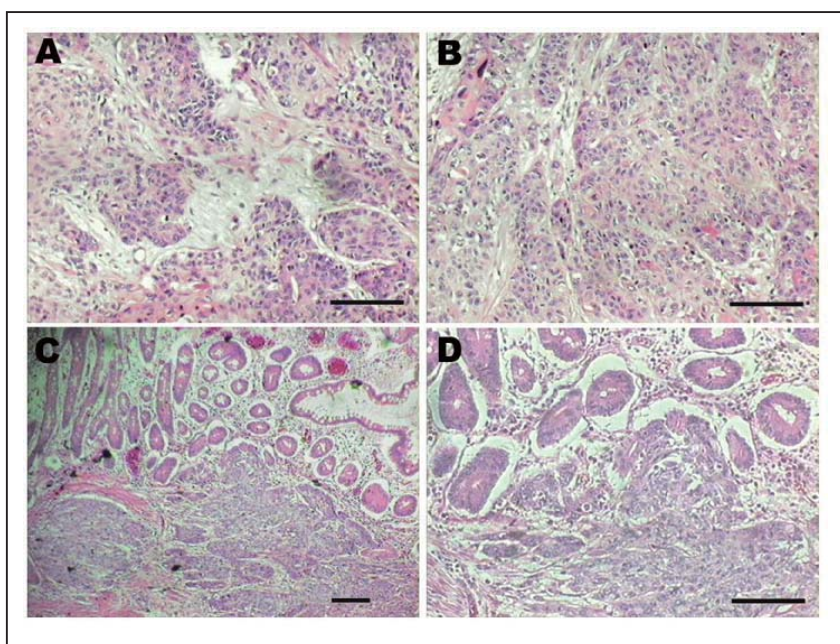
The patient underwent an emergent exploratory laparotomy after pre-operative preparation. Intraoperatively, some turbid light-green ascites and a 0.5 cm  $\times$  0.5 cm well-circumscribed perforation were found in the jejunum 25 cm to the Treitz ligament. A number of firm, gray-white nodules were also discovered in the thickened intestinal wall and mesentery adjacent the perforation. A 30-cm long small intestine with its mesentery encompassing all of the suspicious lesions was resected and then reanastomosis was followed. The results of post-operative pathologic examination were squamous cell carcinoma, which was consistent with the pathologic diagnosis for his scalp tumor (Fig.1). The patient was discharged 15 days after the surgery following an uneventful postoperative course. It was known from the follow up that the patient died 7 months after the surgery, which were not followed by any additional treatment.

## Discussion

Small bowel metastases represent less than 10% of malignant tumors of the small bowel<sup>[3]</sup>. Perforation of the small intestine caused by metastasis from squamous cell carcinoma of the head and neck regions, is extremely rare. No such case has been reported within the past 10

years. The diagnosis of the perforation of small bowel caused by metastasis from other part of the body is hard when metastatic tumors are not clinically apparent. Lack of awareness of metastatic tumor in small intestine from the primary tumor outside abdomen and no ideal techniques for the diagnosis may be the main reasons. Only 18F-2-fluoro-2-deoxy-D-glucose-positron emission tomography (FDG PET)/CT and capsule endoscopy have shown some early success on the diagnosis of small bowel metastatic tumor until now<sup>[4,5]</sup>. For this case, we did not realize that the perforation was caused by metastatic cancer until the results of pathologic examination came out after the surgery. It was considered that fully understanding of medical history of the patient and awareness of the possible sites of the primary tumor are a great help in making a correct preoperative diagnosis for patients with cancer history suffering acute abdominal diseases.

The treatment for small bowel metastatic tumor from squamous cell carcinoma of other part of the body remains debatable since there are not enough cases to be investigated for the efficacy of different treatment modalities. Small bowel metastatic tumor occurring represents the primary cancer has developed in late stage and the patient will have a poor survival. The choice of surgery should be discreet when there is no emergency situation. Chemotherapy could be employed as a palliative treatment. When perforation, or bleeding, or obstruction occurs, the exploratory laparotomy seems inevitable. During the operation, the affected intestine, mesentery and all of the suspicious lesions should be resected as far as possible. But complicated procedures of the surgery, such as removing organ concurrently, are inappropriate.



**Fig.1. A and B** Microscopical examination of squamous cell carcinoma of the scalp. Cancer cells form nests and cytodermas can be observed in some cancer cells. **C and D** Microscopical examination of metastatic squamous cell carcinoma in the small intestine. Integral glands of intestinal mucosa can be observed. Cancer cells invade along submucosa and form nests (Bar = 50  $\mu$ m).

Patients with advanced cancer always have poor physical situation, especially in an emergency state, and more attention should be paid to the post-operative treatment in order to prevent serious infection and multiple organ failure. Based on the appropriate surgery, this patient had a relatively better survival than the previously reported cases of small bowel metastasis from head and neck squamous cell carcinoma<sup>[3]</sup>.

## Conclusion

Small bowel metastatic squamous cell carcinoma from head and neck regions are extremely rare and the treatment options remain debatable. The experience learned from managing this case shows that appropriate treatment may lead to better survival. To have a better understanding of the course of this disease, more such cases and further studies are required.

## Conflict of interest statement

No potential conflicts of interest were disclosed.

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