

# Strengthening the Construction of Pathology Department of Chinese Primary Hospitals is an Urgent Task

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## Case report

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# Abstract

**Background:** pseudomyxoma peritonei(PMP) is a rare disease, the incidence of occult, mainly occurs in the appendix, ovary, etc., generally speaking, the progress is slow, through imaging diagnosis is more difficult, and the symptoms are not typical, often found in abdominal exploration, the treatment effect is relatively poor. Because PMP is often secondary to appendectomy, it is particularly important to make a careful pathological examination of the specimen after appendectomy.

**Case presentation:** This case is a middle-aged and elderly man. Seven years after appendectomy, the specimen was confirmed as PMP by pathology after laparoscopic exploration. Later, the specimen 7 years ago was reexamined and pathological examination showed that the tumor was composed of mucinous cells.

**Conclusions:** This puts forward higher requirements for the construction of pathology department in China's primary hospitals.

## Background

PMP is a rare disease with a very low incidence. The main source is the appendix <sup>[1]</sup>. There have been reports on the urachus, lung, stomach, intestine, pancreas, breast, and so on. This is a well-differentiated or critical type of cancer. With the increase of tumor bodies, the final extrusion of normal abdominal organs would lead to abdominal pain, abdominal distention, intestinal obstruction and other symptoms <sup>[2]</sup>. The main feature of this disease is the secretion of yellow jelly-like mucinous ascites. The gold standard treatment for PMP is the combination of complete cytoreductive surgery plus hyperthermic intraperitoneal chemotherapy <sup>[3]</sup>.

## Case Presentation

In April 2020, a 58-year-old man presented with abdominal distension and complained of weight loss of approximately 10 kg in the last two months, with abdominal distension, positive mobile dullness, and no other discomfort, such as jaundice and fever. The hematological examinations revealed that the tumor indicators, such as CEA, significantly increased. Hepatitis B was small and positive, albumin and prealbumin were close to normal, and diet and sleep were acceptable. The patient denied a history of surgery upon admission to the hospital. However, the patient had a history of smoking and drinking for more than 30 years. The external hospital performed relevant examinations to rule out the possibility of tuberculosis. The diagnosis initially considered gastrointestinal tumors with cancerous ascites, and the prognosis was poor. However, after admission, there was no obvious abnormality after gastroscopy and enteroscopy. The MRI revealed multiple metastatic cancers of the liver and peritoneum, but the primary focus was not clear. Then, family members requested for a PET-CT examination. However, the primary focus was still uncertain. Next, abdomen puncture was performed to introduce a small amount of atypical cells from the ascites, but it was not clear whether it was a tumor. The patients and their families

are very anxious, eager to get a confirmed diagnosis, and put a lot of pressure on the medical staff. After the multidisciplinary discussions, it was considered that the liver lesions are more likely to metastasize, the diameter was small, and the location was difficult to perform the puncture examination. Although a peritoneal puncture is feasible, the success rate is low.

The surgeon came to consult and asked again for a detailed medical history, the patient's abdominal wall was found to have insignificant surgical incision marks. The patient remembered undergoing an appendectomy at the primary hospital due to appendicitis in 2013. However, the physician did not ask the medical history carefully and the patient did not offer to provide it. The pathological report suggesting that the patient had abnormal cells in the appendix. However, the pathologist did not take further measures to rule out the tumor, such as a consultation in an authoritative hospital.

The patient was recommended to directly undergo laparoscopic exploration, during the laparoscopic exploration, the patient's abdominal pelvis was covered with grape-like, jelly-like tumors, which violated the entire abdominal wall, omentum, liver surface and mesentery. Several pieces of tumor tissue were sent for postoperative pathology, which suggested pseudomyxoma peritonei (PMP). The local hospital was contacted again, and the patient's appendix specimens were re-sectioned to confirm that a small amount of mucinous cystic tumor was observed at that time. At this point, the patient's diagnosis is clear. That is, the patient had appendix mucinous adenocarcinoma with multiple intra-abdominal metastases after seven years.

## Discussion And Conclusions

At present, although the majority of grass-roots hospitals (prefecture and county level) in China have pathology departments, their development is relatively slow due to financial and talent constraints. At the same time, the main reasons are, as follows: 1) The development of the pathology department itself is not valued by the hospital. 2) Pathology doctors are in short supply. The number of qualified pathologists is less than 10,000, and the top three hospitals account for more than 70%. 3) the cost of diagnosis and the training period of pathologists is quite long. Experienced physicians need at least 10 years of training, and many pathologists have difficulty in persevering in pathology.

Although appendectomy is an entry-level operation for general surgeons, clinicians need to be reminded of the postoperative pathological results. Hence, determining how to establish a complete talent training system in primary hospitals, and improve the income and status of pathologists in primary hospitals are the key points that needs to be given attention.

## Abbreviations

pseudomyxoma peritonei(PMP)

## Declarations

All named authors have read the manuscript and have agreed to submit the paper in its present form. The research has not been and will not be submitted simultaneously to another journal, in whole or in part. The paper reports previously unpublished work. All those named as authors have made a sufficient contribution to the work.

### **Ethics approval and consent to participate**

This research was permitted by the Ethical Committee of the First Affiliated Hospital of Anhui Medical University. The study complied with current Chinese law and was performed in accordance with the principles of Declaration of Helsinki.

The patient voluntarily participate in this research to ensure that he knows and agrees with the treatment plan and treatment process in the article.

### **Consent for Publication**

in this statement, written consent to publish this information was obtained from study participants. Proof of consent to publish from study participants can be requested at any time. All named authors have agreed to submit the paper in its present form and agreed to publish this work to World Journal of Surgical Oncology.

### **Availability of data and material**

The datasets used and analysed during the current study available from the corresponding author on reasonable request.

### **Competing interests**

All those named as authors have made a sufficient contribution to the final manuscript for submission. All authors declare no conflict of interest, and agree on consent to be listed as coauthors. There is no any financial and non-financial competing interests

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### **Authors' contributions**

KC: Writing articles, summing up experience, consulting literature, collecting data

XLM: Comprehensive treatment of patients and quality control of articles

ZGW: Operation, suggestion and opinion of laparoscopic surgery and manuscript.

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## Figures

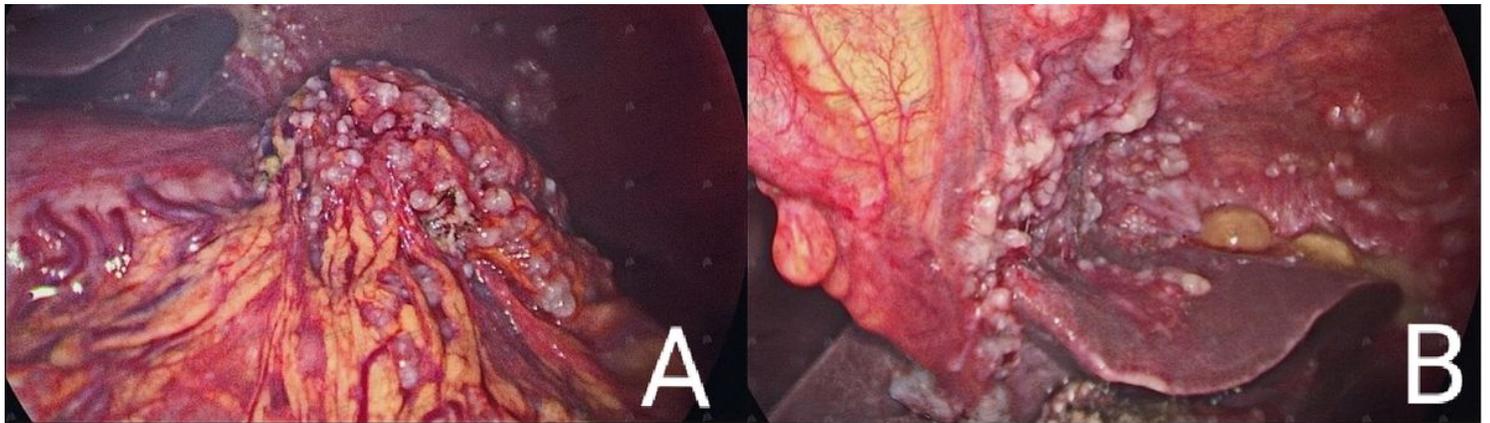


Figure 1

Multiple cystic and nodular masses could be seen under laparoscopy