

A RARE PHENOMENON CREATING DILEMMA FOR THE SURGEON: PNEUMOPERITONEUM AFTER COLONOSCOPY

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Abstract: Pneumoperitoneum is free air existence in abdomen and usually caused by the perforation in gastrointestinal system. Peptic ulcer disease is the most common cause of perforation and pneumoperitoneum. The presence of free air in abdomen usually indicates emergency surgery. However, surgical approach is not required in some cases of pneumoperitoneum if there is no evidence of perforation and no sign of peritoneal irritation. Herein, we present an 82-year-old male patient who had pneumoperitoneum after colonoscopy and treated non-surgically.

Key words: colonoscopy, complication, pneumoperitoneum.

INTRODUCTION

Colonoscopy is known as a safe procedure, but complications may occur. The most common complications are perforation and massive haemorrhage (1). The incidence of these serious complications is low but, despite increased experience with the procedure, it remains unchanged over time. The risk for adverse events has been also associated with comorbidity: diabetes mellitus, history of previous stroke or cardiovascular disease, chronic obstructive pulmonary disease. But pneumoperitoneum without signs of peritonitis after colonoscopy is a rare phenomenon which creates a management dilemma for the surgeon (2). Herein, we present an 82-year-old male patient who had pneumoperitoneum after colonoscopy and treated non-surgically.

CASE PRESENTATION

An 82-year-old, Jordanian male with a history of hypertension and oesophagus carcinoma surgery 14 months ago was undergoing routine upper gastrointestinal system endoscopy and colonoscopy with sedoanalgesia. Both procedures complicated uneventfully and no pathologies were found. Two hours after endoscopic

procedures, he complained about abdominal and shoulder pain. On examination, the patient's blood pressure was 155/90 mm Hg, heart rate was 72 bpm and body temperature was 37.2 °C. His abdominal examination did not reveal any signs of rigidity or rebound but abdomen was distended and tympanic by percussion. Complete blood count revealed a white blood count of 4550 cells/mm³ (4600–10200 cells/mm³) and haematocrit level of 36% (40%–54%). His electrolytes, liver function tests, blood urea nitrogen and creatinine were normal. Intravenous and oral contrast-enhanced computed tomography scan revealed only pneumoperitoneum (Figure 1). Non-surgical treatment decision was taken due to the fact that the patient has no sign of acute abdomen, no fever, his leukocyte value was normal, and there was no free fluid in the computed tomography. His oral diet was stopped, intravenous fluid and 2nd generation cephalosporin antibiotics started as a precaution. On the third day of his follow up, his complains about abdominal and shoulder pain decreased also body temperature was 36.8 °C. on his examination, his abdominal distension and

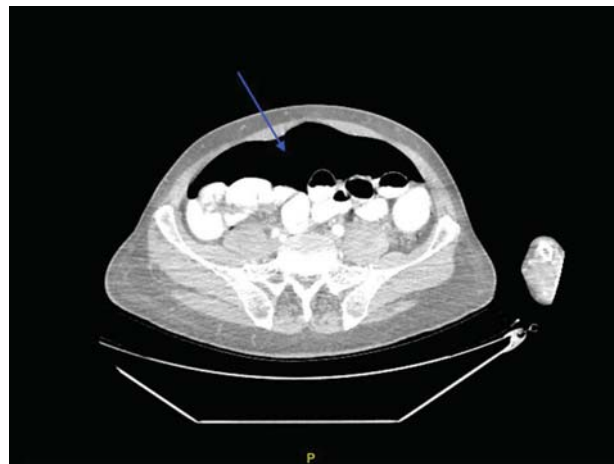


Figure 1. Computed tomography image of pneumoperitoneum (Blue arrow)

tympanic sound by percussion decreased. His bowel sounds were normoactive and he had defecation. Complete blood count revealed a white blood count of 6500 cells/mm³. He was started on an oral liquid diet on the third day and given a normal salt-free diet on the fourth day. During the period of hospitalisation, his vital signs were normal. The patient stayed in hospital for 7 days. The patient was discharged without any problem.

DISCUSSION

Colonoscopy is a safe and effective examination technique for visualization of colonic lumen and it is

commonly used to diagnose colonic pathologies and nowadays, it is used for treating some pathologies. The literature reports a complication rate of up to 0.5% (1). Most common complications of colonoscopy including perforation and massive haemorrhage are rare but have potential to cause very serious consequences even lead to fatal outcome. Direct mechanical trauma of colonoscopy, thermal trauma from electrocautery of laser device and barotrauma from excessive air insufflation are mechanisms of colonoscopy related perforation (2) which has prevalence ranges from 0.016% to 0.2% following diagnostic examination and up to 5% after therapeutic colonoscopy (3). Polypectomy, pneumatic di-

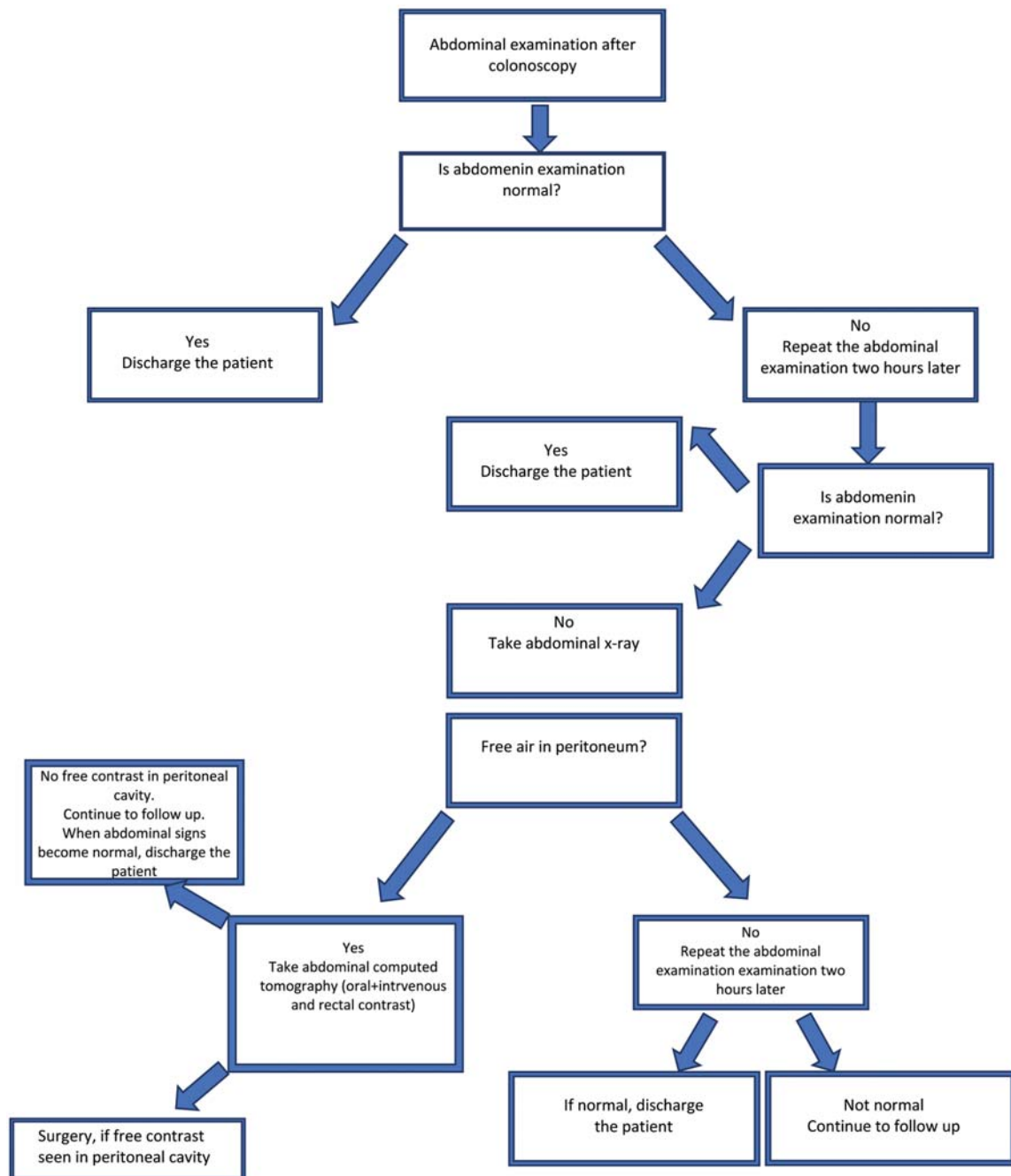


Figure 2. Algorithm of management free peritoneal air after colonoscopy

latation for Chron stricture, mucosal resection of lesions during colonoscopy are high risk procedures. Patients older than 75 years or those with comorbid diseases also have increased risk of perforation (4). After colonoscopy, patients usually describe abdominal and shoulder pain from referred diaphragmatic irritation. Physical examination may reveal a distended, rigid abdomen which is tympanic by percussion. Intestinal sounds may be hypoactive or absent. Abdominal tenderness varies and is present due to peritoneal irritation. Subcutaneous air and crepitation in the abdominal wall may be present. Increase of abdominal pressure may cause upward distension of diaphragm muscle which leads to respiratory problems (3). Pneumoperitoneum without signs of peritonitis after colonoscopy is a rare phenomenon which creates a management dilemma for the surgeon. Pneumoperitoneum may occur without perforation. Colonic mucosa may become air permeable if mucosa is herniated via muscular layer and serosa (5). In contrast with this hypothesis, in the study of Pearl JP et al, 100 patients underwent colonoscopy and then radiography of the chest and abdomen to detect free air. They revealed, no cases of benign pneumoperitoneum were detected and they argued pneumoperitoneum after colonoscopy is possibly non-existent and advocated to treat all cases of free in-

traabdominal air after colonoscopy as perforations (6). Other causes of pneumoperitoneum are emphysematous cholecystitis (7), spontaneous bacterial peritonitis (8), intestinal cystic pneumatosis (9), and liver abscess (10). Most common gynecological cause is rupture of pyometra (11). As a result of this rare condition and management dilemma, some of these patients may undergo unnecessary laparotomy (Figure 2).

CONCLUSION

Pneumoperitoneum after colonoscopy is a rare and unusual situation which creates a dilemma for the surgeon. We think that patients can be followed without surgery if there is no free fluid and no evidence of acute abdomen despite free air.

DECLARATION OF INTEREST

The authors declare that there are no conflicts of interests.

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Sažetak

REDAK FENOMEN KAO DILEMA ZA HIRURGA: PNEUMOPERITONEUM NAKON KOLONOSKOPIJE

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Pneumoperitoneum je prisustvo slobodnog vazduha u trbuhu i obično je uzrokovan perforacijom u gastrointestinalnom sistemu. Peptički ulkus je najčešći uzrok perforacije i pneumoperitoneuma. Prisustvo slobodnog vazduha u trbuhu je obično indikacija za hitnu operaciju. Ipak, hirurški tretman nije neoph-

dan u nekim slučajevima pneumoperitoneuma, i to ukoliko ne postoji dokaz o perforaciji i ukoliko nema znakova iritacije peritoneuma. Predstavljamo pacijenta muškog pola, starog 82 godine, koji je imao pneumoperitoneum nakon kolonoskopije i nije lečen hirurški.

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