

A Rare Case of Colorectal Injury With Compressed Air

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Abstract

Colorectal injuries from implement on solid objects are infrequent but not rare. In the same category are injuries caused by non solid objects. Barotrauma from compressed air and liquid is less frequently encountered. In this report, you can read a case with colorectal injury after using air hose to dust off patient's clothing. Although taking history sometimes is not possible due to factors related with patients' condition, physical and radiological findings related with tension pneumoperitoneum can make physician diagnose injury and etiology.

Keywords: Colorectal injury; Compressed air; Pneumoperitoneum

Introduction

Colorectal injuries from implement on solid objects are infrequent but not rare. In the same category are injuries caused by non-solid objects. Barotrauma from compressed air and liquid is less frequently encountered [1]. We are presenting a case of barotrauma to the colon from compressed air and discuss diagnosis, injury patterns and treatment of this type of injury.

Case Report

A 36-year-old man was admitted to ED due to his abdominal pain and distension after using air hose to dust off his clothing. His vital signs were in normal range and physical exam was normal except abdominal distension and signs of peri-

toneal inflammation. His chest and abdomen-X ray showed huge amount of pneumoperitoneum (Fig. 1). His intraoperative findings were free intraperitoneal air without free fluid and bowel contents, dilated colonic segments, multiple serosa injuries in all segments of colon but especially sigmoid colon and cecum. There was neither perforation finding in the colon nor any other abdominal organ injury. His follow-up period was completed without any complication and he was discharged in the 5th day after operation.

Discussion

Review of the literature reveals a similar case report in 1904 from a British surgeon in London [2]. Case analysis of pressurized-air injuries often reveal a misguided coworker and unwise behavior. Those cases not involving misbehavior usually occurred when employees used an air hose to dust off their clothing as likewise in our case. It is important to realize that this injury can occur without inserting the air hose into the anus [1, 2]. In several cases reported in the literature,



Figure 1. Abdominal X ray showing free air in peritoneum.

Manuscript accepted for publication November 16, 2012

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doi: <http://dx.doi.org/10.4021/jmc997w>

the air hose was “fired” through clothes at a distance from the anus [1-4].

Although the air pressure can vary in different situations, it takes only 1 or 2 seconds to deliver enough pressurized air to cause major damage. The rupture usually occurs in a longitudinal direction along the muscle fibers with full thickness perforation or with stripping of the serosa and muscularis. The most common injury location is the anti-mesenteric surface of the sigmoid colon [1]. Some patients may withhold information, trying to protect the guilty party or due to embarrassment. In such cases, the general symptoms are abdominal pain, abdominal distension, rectorrhagia, tachycardia, tachypnoea. Tension pneumoperitoneum is a characteristic presentation [1, 5, 6]. Death can depend on acute air embolism, acute fat embolism, acute respiratory insufficiency due to enhanced intra-abdominal pressure and chest compression, acute heart failure due to insufficient preload and peritoneal shock [5].

Percutaneous decompression of the tension pneumoperitoneum can be accomplished by inserting a cannula or a Veress needle into the abdomen for relief of the pressure [7]. Sixteen-gauge angiocath was inserted percutaneously in the right upper quadrant of the abdomen for decompression with alleviation of respiratory and hemodynamic problems [8]. The overall mortality of pneumatic rupture of the bowel was 65%. If the acute shock was not immediately fatal, the survival was depending from further treatment. Surgery reduced mortality to 42% [9].

Conclusion

Compressed air related colorectal injuries are rare condi-

tions admitted to emergency departments. Although taking history sometimes is not possible due to factors related with patients' condition, physical and radiological findings related with tension pneumoperitoneum can make physician diagnose injury and etiology.

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