Subcutaneous Facial and Neck Emphysema as First Sign of Intestinal Perforation in a Female Patient After a Routine Colonoscopy

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ABSTRACT

Colonoscopy is a safe procedure for the diagnosis and management of colorectal diseases. Colonic perforation due to colonoscopy represents an uncommon complication. Here we present an unusual case of iatrogenic bowel perforation resulting in subcutaneous facial and neck emphysema, pneumomediastinum and pneumoretroperitoneum. Taking a detailed recent medical history information is always required when encountering patients with subcutaneous emphysema after invasive examination procedures. Alertness on iatrogenic complication eventualities may improve prognosis and avoid life-threatening conditions.

Keywords: Subcutaneous emphysema, pneumomediastinum, pneumoperitoneum

Introduction

Colonoscopy is a commonly utilized procedure for the evaluation and therapy of colorectal diseases. Although it is considered a relatively safe test, complications such as intestinal perforation may be life-threatening if not diagnosed promptly [1]. Furthermore, although perforation rate has declined compared to the past, advanced interventional colonoscopy during the last years led to an increase trend [1].

We report information on a patient admitted to our facility with subcutaneous emphysema of neck and face, pneumoperitoneum, pneumoretroperitoneum and pneumomediastinum secondary to bowel perforation during routine colonoscopy.

Case Report

A 62-year-old female was admitted to the emergency department of the Saint George General Hospital of Chania, Crete, Greece complaining of chest and mild abdominal pain. Three hours earlier, she underwent a preventive colonoscopy by a gastroenterologist in a private medical practice in order to evaluate symptoms of abdominal discomfort in a private medical practice in order to evaluate symptoms of abdominal discomfort of 3 months duration. Gastroenterologist reported that the procedure was uneventful. Her past medical history included hypertension and hyperlipidemia.

On admission, swelling of the face and neck were noticed. Her vital signs were as follows: blood pressure, 125/65 mmHg; oxygen saturation 97% while she was breathing ambient air; heart rate, 100 per minute; temperature, 36.5 degree Celsius. Laboratory evaluation disclosure included: white blood cell count, 9.90 cells/μL (normal range: 4–11 K/μL); hemoglobin, 13.9 g/
was decided with a triple scheme intravenous 
ment of our hospital. Due to the absence of 
sequently transferred to the Surgery depart-
at the sigmoid level. The patient was conse-
serologist noticed a large inflamed diverticulum 
During colonoscopic examination, the gastroen-
emphysema of the neck (Figures 1-4).

pneumoretroperitoneum and subcutaneous 
thoracic scans showing pneumomediastinum, 
ed chest X-ray and thoracic and abdominal 
aging studies included chest X-ray and thoracic and abdominal 
ruary examination was performed. Subcutaneous emphysema as well as pneumo-
mediastinum and retro-peritoneum started to 
nteological pressure) are larger and are 
produced from diagnostic colonoscopy (due 
regards to the time of diagnosis, perforations 
management varies from simple closure with 
those occurring from therapeutic 
colonoscopy are diagnosed late and are smaller 
in size [4]. Sigmoid colon is more often affected 
Thermal injury and electro-coagulation may 
result in delayed colonic perforation due to 
ischemia of the colonic wall [6].

Pathogenesis of the extra-luminal air diffusion 
secondary to intestinal perforation is attrib-
uted to the anatomical continuity between the 
subcutaneous tissue, the mediastinum and the 
retro-peritoneum [7]. More specifically, following 
perforation, intra-luminal air is compressed and it 
may flee into retroperitoneal or peritoneal cavity 
[7]. From the retroperitoneal level, air is moving 
next to the fascial plans, mesentery and through the 
esophageal hiatus passes into the mediasti-
um and subcutaneous tissues [7]. In case of rup-
ture of the mediastinal parietal pleura, pneumo-
thorax may occur [8]. It is also remarkable that 
eventually, intestinal perforation is not detected 
and gas insufflations continue, situation may be 
complicated with tension pneumo-thorax with 
reverse outcomes in terms of prognosis and 
mortality [7, 8]. Possible clinical presentations of 
this complication also include pneumo-pericardi-
um, peri-orbital edema and pneumo-scrotum [9].

Following perforation, symptoms may appear 
either immediately or after several hours [9, 
10]. Abdominal pain and tenderness are sug-
gestive of intra-peritoneal perforation [9]. High 
body temperature, leukocytosis and sinus tachy-
cardia are usually present with intra and extra-
peritoneal perforation [9].

Management should be individualized on a 
case-by-case basis [3]. In the absence of signs 
of peritoneal inflammation, a conservative 
management with intravenous wide spectrum 
antibiotherapy is suggested. In the presence of 
fecal intestinal content or signs of peritoneal 
inflammation, a surgical approach is required 
[3]. In alignment, distal obstruction, worsening 
or absence of clinical improvement are sugges-
tive for the surgery alternative [2, 3, 8]. Surgical 
management varies from simple closure with 
sutures, which depends from the time of 
diagnosis, the size of perforation and the qual-
ity of the injured intestinal wall, to colostomy, 
segmental resection or a Hartmann proce-
dure [3]. Clipping during endoscopy could be 
performed in some cases if small tears of the 
colon wall exist [2, 5].

Here, we presented a rare case of extra perito-
eal perforation after a diagnostic colonoscopy 
referred to the hospital with signs of facial and 
neck subcutaneous emphysema. Physicians have 
to be alert of this rare complication and refer 
patients in order to be timely diagnosed and 
closely monitored.
Informed Consent: Informed consent was obtained from patients who participated in this study.

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