

Incidental surgical finding of electrocoagulation syndrome after large polypectomy

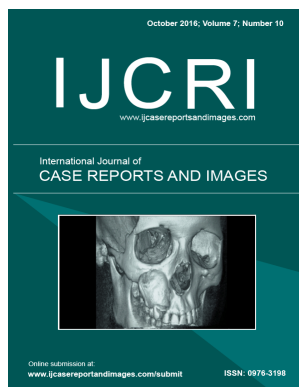
Maddalena Zippi, Marzano Chiara, Occhigrossi Giuseppe, Giampiero Traversa

ABSTRACT

Abstract is not required for Clinical Images



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Incidental surgical finding of electrocoagulation syndrome after large polypectomy

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To the Editors,

Post-polypectomy coagulation syndrome (PPCS) is a rare and well described complication of polypectomy which occurs when the procedure is performed using electrocautery. A transmural burn of the colonic wall characterizes it from anatomical point of view. Clinically, patients present symptoms mimicking a colonic perforation, usually within 12 hours after the procedure [1]. Generally, these patients present fever, localized abdominal pain, localized peritoneal signs, and leukocytosis. If this syndrome is detected immediately, the patient can be treated conservatively without resorting to surgery [2]. For large polyps (≥ 2.0 cm), surgical resection has been often preferred. Nowadays, endoscopic removal represents an optimal option to surgery, especially the endoscopic mucosal resection (EMR).

Herein, we report the case of a patient who presented features of post-polypectomy electrocoagulation syndrome in the absence of clinical symptoms or biochemical signs.

A 64-year-old female was admitted to our unit for rectorrhagia. Colonoscopy showed a neoformation in the cecum with histology positive for malignancy (adenocarcinoma). A large sessile polyp of about 4.5 cm

was found in the sigmoid colon (0-Is; Paris classification) with a IIIL pit-pattern (Kudo classification). This was removed performing a two-times piecemeal endoscopic mucosal resection (EMR), with lifting of the mucosa with hypertonic solution and adrenaline (dilution: 1:20.000) mixed with methylene blue. Argon plasma coagulation (APC) was used for residual tissue at a low setting (40 watts /2 L min) (Figure 1A). The histologic examination of the specimens showed a tubular adenoma with high-grade dysplasia. After the procedure, broad-spectrum antibiotics were administered. The patient was asymptomatic with no bleeding or signs of perforation, as demonstrated by the computed tomography (CT) scan performed for oncological purposes (staging of neoplasia) (Figure 2). Five days after the procedure, the patient underwent right hemicolectomy for the lesion in the cecum. In the course of surgery, the serosa side of the previous EMR of the sigma showed burn-like injuries with erythema and signs of electrocoagulation (Figure 1B).

Imaging plays an essential role in differentiating PPCS from suspected perforation. The presence of free air or air in the retroperitoneal space is characteristic of frank perforation and well visualized with a plane X-ray of the abdomen or CT scan [2]. In this condition, patients must be hospitalized and, in some cases, surgery is required. In a recent multicenter and retrospective study, Cha et al. investigated the risk factors for developing post-polypectomy coagulation syndrome (PPCS) [3]. Of

Maddalena Zippi¹, Marzano Chiara², Occhigrossi Giuseppe², Giampiero Traversa²

Affiliations: ¹MD, PhD, Unit of Gastroenterology and Digestive Endoscopy, Sandro Pertini Hospital, Rome, Italy; ²MD, Unit of Gastroenterology and Digestive Endoscopy, Sandro Pertini Hospital, Rome, Italy.

Corresponding Author: Maddalena Zippi, MD, PhD, Unit of Gastroenterology and Digestive Endoscopy, Sandro Pertini Hospital, Via dei Monti Tiburtini 385, 00157 Rome, Italy; E-mail: maddyzip@yahoo.it

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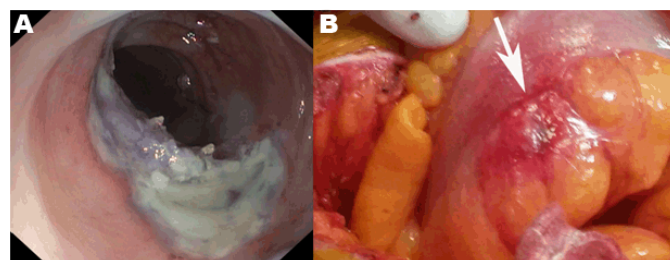


Figure 1: (A) Endoscopic view of colonic mucosae after EMR, and (B) Surgical view of “burned” serosa (white arrow).

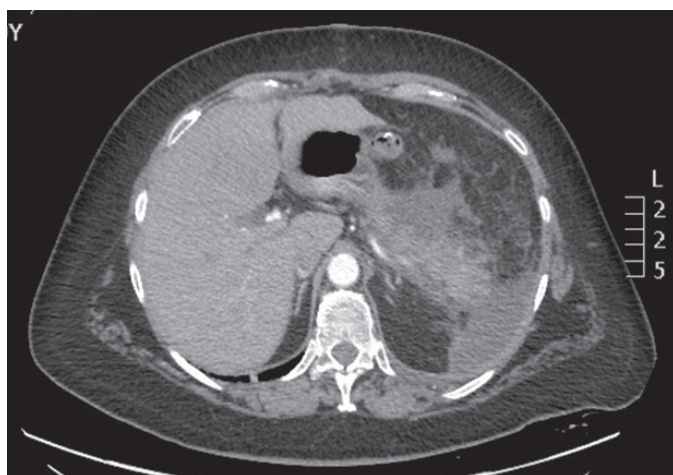


Figure 2: Abdominal computed tomography scan showing no signs of perforation.

the 47.083 polypectomies performed at nine university hospitals in Korea, only 34 patients (0.07%) needed hospitalization for their symptoms. All were treated medically. Cha et al. showed that hypertension, large size and non-polypoid lesion are potential risk factors for PPCS [3]. The incidence of PPCS varies from 0.003–0.1% [2]. Carvalho et al. performed 73 EMRs in 71 patients having six complications (8.2%), all resolved without surgery. Of these, post-polypectomy syndrome was 1.4% [4]. Thus, in all cases the patients were symptomatic. It is interesting to note that our patient did not show clinical signs or biochemical alterations after polypectomy, in particular no increase in white blood cell count or pain. This would seem to indicate that not all patients with PPCS can be diagnosed with a combination of clinical symptoms and laboratory findings.

Few studies in literature have reported surgical images of electrocoagulation syndrome (transmural colonic burn) and in any case such studies often pertain to the surgical repair of the colonic damage resulting in perforation.

In conclusion, we would suggest that the percentage of this syndrome may be underestimated because, as demonstrated by our case, the heat generated during electrocauterization may cause transmural damage in the absence of clinical signs. Caution should be adopted even when using low-setting cauterization during polypectomies, especially EMR.

Keywords: Electrocoagulation syndrome, Endoscopic mucosal resection (EMR), Large polyps, Post-polypectomy coagulation syndrome (PPCS)

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Maddalena Zippi – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Marzano Chiara – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

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Giampiero Traversa – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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