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Case Report

# Incarcerated Colonoscope in a Left Inguinal Hernia: A Rare a Case Report

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## Abstract

An incarcerated colonoscope in an inguinal hernia is an extremely uncommon endoscopy complication. When it occurs, a left-sided inguinal hernia is often involved, and several methods of managing this complication have been documented in the literature. We are presenting a 55-year-old patient whose colonoscopy was complicated by the colonoscope getting trapped in a left inguinal hernia. This uncommon problem is more likely to happen during withdrawal, which makes our case special as the colonoscope was incarcerated during the insertion phase.

***Keywords:*** *Colonoscopy; Incarceration; Inguinal Hernia*

## Introduction

During a regular colonoscopy, an endoscope may become incarcerated in an inguinal hernia. It is more frequent to occur on withdrawal, and often the hernia is not noticed before the colonoscopy. Inguinal hernias on the left side are more common, but in patients whose anatomy has changed after abdominal surgery, right-sided hernias may also be implicated [1]. Over the past forty years, several authors have proposed a variety of strategies to address this uncommon colonoscopy complication. Through reporting our case of this 55-year-old man, we highlight the possibility of this unusual complication during the colonoscope insertion phase and its managing strategy.

## Case Report

We report the case of a 55-year-old diabetic male, with a history of previous colonoscopy a year ago, which found colonic angiodysplasias treated with injection-APC method (Argon plasma coagulation). He presented to the emergency department with rectal bleeding. Clinical examination revealed pallor and a cachectic patient. A colonoscopy was deemed necessary and was performed under mild conscious sedation. On initial insertion to 80 cm, it became impossible to advance the endoscope although the lumen was patent. Physical examination revealed a bulging of the left inguinal region (Figure 1). Thus, we suspected the incarceration of the colonoscope in a left inguinal hernia. We attempted external manual pressure, clockwise and counterclockwise torque with gentle traction. Fortunately, it was successful and the colonoscope was withdrawn. Also, during the insertion phase, we noted engorged vessels in the rectum. Argon plasma coagulation was applied and the patient remained stable. He was then referred to the surgical team for a cure for his hernia to avoid the same incident.

***Figure 1:*** *incarcerated colonoscope bulging into the left inguinal hernia during colonoscopy.*

## Discussion

Incarcerated colonoscopes in an inguinal hernia is an extremely uncommon colonoscopy complication. Up until 2021, only 16 cases have been documented in the literature [2]. The majority of documented occurrences involved a left-sided inguinal hernia and only one case of a right-sided inguinal hernia was reported in a patient who has had a history of right hemicolectomy in the past [3].

It is interesting to note that in most documented situations, the inguinal hernia is not detected before the colonoscopy. Although it is more commonly reported after withdrawal, colonoscope incarceration can occur during both insertion and withdrawal, usually when the endoscope is approximately 60 to 80 cm from the anal verge [2]. In our case, it occurred during the insertion phase. Thus, anytime the gastroenterologist feels significant fixed resistance, abdominal palpation should automatically be performed to rule out this scenario. When bowel loops become incarcerated, the neck of the indirect inguinal hernia forms the site of obstruction [3]. When the colonoscope is unable to progress during insertion, there are three possible reasons why this may happen. Firstly, a bowel loop could have become lodged in the narrow-necked inguinal hernial sac, preventing the colonoscope from entering. In this particular situation, the hernia may only be suspected in imaging modalities [4]. In the second scenario, patients have moderately large inguinal hernias that allow the colonoscope to enter the hernial sac but prevent it from exiting. In this case, the colonoscope tip enters the hernial sac with great ease, but it becomes obstructed and causes pain in the lower abdomen and scrotum when it tries to exit the hernial sac by forming a loop [5]. In the third case, the hernial sac is wide enough to allow the colonoscope's two segments to enter and progress, but insertion causes a big loop in the scrotum, which causes pain leading the scope to "freeze," which prevents the inspection from going further [6]. However, the colonoscope is incarcerated during withdrawal in half of the case reports that have been published. Here, a loop forms during the colonoscope's advancing phase and bulges into the hernial sac [2]. With the colonoscope and colon prolapsing into the scrotum, the hernial orifice is wide enough to allow the two segments of the colonoscope to enter and depart easily. A tight loop, typically a gamma loop, does not form until the colonoscope is removed.

Numerous techniques for reducing the incarcerated colonoscope have been reported. These techniques include manual reduction after deepened sedation, the "pulley" approach of manual reduction, reduction under direct fluoroscopic guidance, surgical reduction, or combinations of the aforementioned techniques. It is advised to provide light physical pressure simultaneously to help the loop pass through the hernial orifice. If it fails, the authors advise attempting the "pulley" method if the hernial orifice is too tiny to allow the colonoscope to exit the smallest loop possible. In case of failure, surgery is deemed necessary [3].

Some clinicians have suggested the presence of a large inguinal hernia as a relative contra-indication to colonoscopy [1]. We suggest that if a colonoscopy is clinically necessary before the repair of a moderate to large inguinal hernia, the option of computerized tomography colonoscopy should be explored. Should a colonoscopy still be necessary, the authors suggest that the risk of incarceration may be reduced by reducing the hernia before colonoscopy and maintaining reduction manually while the scope is advanced [6].

## Conclusion

Fortunately, incarcerated colonoscopes in an inguinal hernia are an uncommon occurrence.

When treating patients with a history of inguinal hernias, computed tomography colonoscopy should be considered. If a colonoscopy is still necessary, risk-reduction measures should be implemented.

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