



## Amyand's Hernia: Case Series in Our Hospital

Authors

**Dr R. Sumanth<sup>1</sup>, Dr M. Keerthi<sup>2</sup>, Dr K. Sita Avanthi<sup>3</sup>, Dr G. Kiran Kumar<sup>4</sup>**

<sup>1</sup>Post Graduate, General Surgery

<sup>2</sup>Assistant Professor, General Surgery

<sup>3</sup>Post Graduate, General Surgery

<sup>4</sup>Professor, Dept of General Surgery

Corresponding Author

**Dr. G. Kiran Kumar**

Professor, Dept of General Surgery

### Abstract

*A vermiform appendix as content in inguinal hernia is known as amyand's hernia. Incidence of having appendix within hernia. Hernia sac varies from 0.5% to 1% whereas only 0.1% of cases complicate into acute appendicitis, underscoring the rarity of condition.*

**Keywords:** *Amyand's hernia, appendix in hernia sac, bassini's repair, inguinal hernia, obstructed hernia.*

### Introduction

An inguinal hernia is protrusion of abdominal cavity through inguinal canal into scrotum

- Contents of inguinal hernia varies from case to case, but the presence of appendix in an inguinal hernia is rare
- Entity of amyand's hernia has an incidence of 1% and is complicated by acute appendicitis in 0.8 – 0.13% of cases
- Amyand's hernia is rare variety of hernia where appendix as content with or without inflammation, which is named after the French born English surgeon Dr. Claudius amyand

- We present a case reports of this rare entity known as amyand's hernia that presented as
  1. Irreducible hernia which was diagnosed intra operatively with normal appendix with omental adhesions subsequently adhesiolysis done contents reduced and lichenstein tension free hernioplasty
  2. Inguinal hernia intraoperatively with tip of appendix was inflamed appendectomy done further hernia repaired with modified bassini's method

3. Complete inguinal hernia content being normal appendix and content reduced later lichenstein's hernioplasty was done
4. Irreducible inguinal hernia intra operatively inflamed appendix with discoloration of omentum ,appendectomy and partial omentectomy was done followed by modified bassini's repair

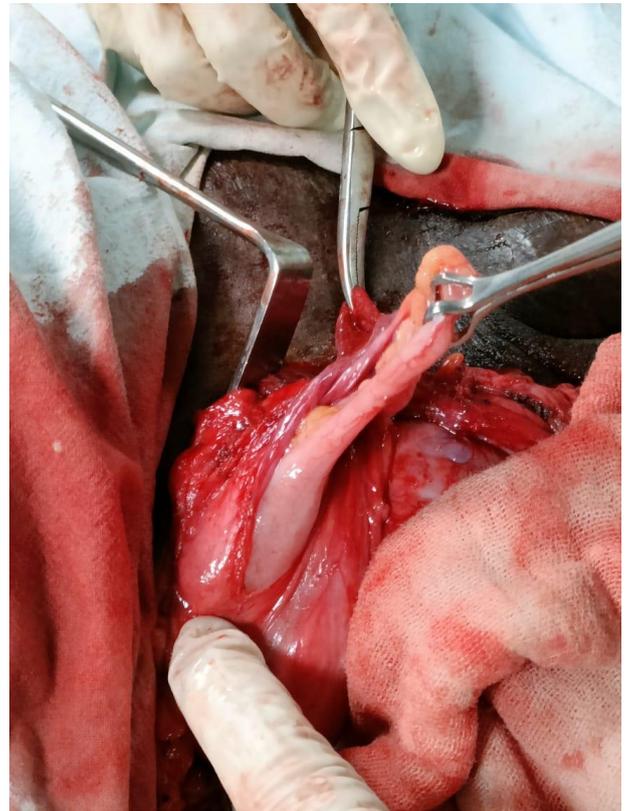
- Treated with broad spectrum antibiotics
- Post operative period was uneventful
- Pod 7 suture removal done, wound healthy

### Case Report 1

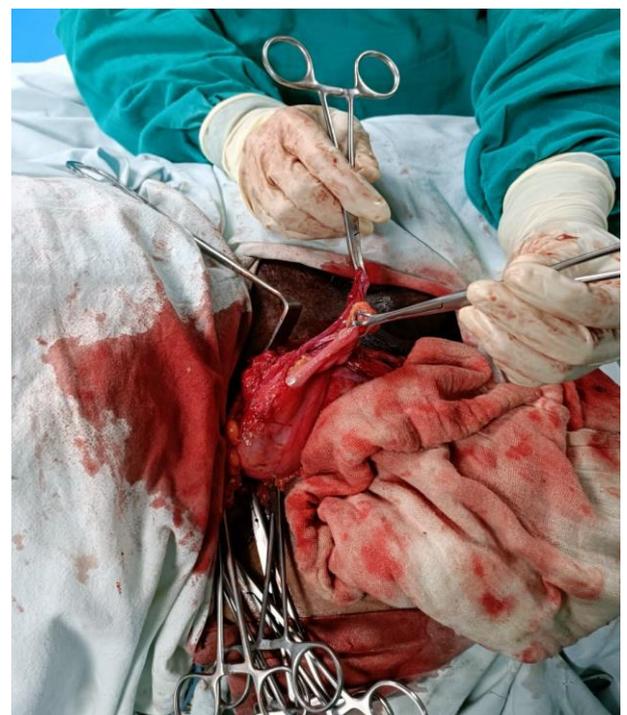
- 55 years old male patient presented to surgical opd with complaint of swelling in right inguinal region since 1 year associated with pain and swelling is irreducible for the past 2 days, swelling initially small in size gradual progressive and attained to present size. Not reducible on lying down position
- No h/o vomiting , fever
- No h/o difficulty in micturition

### Physical Examination

- A single pyriform shaped swelling present on right side extending from groin to base of scrotum
- Tenderness +
- No local raise of temperature
- Irreducible
- No expansile cough impulse
- Testis palpated separately in scrotum
- Opposite side normal
- Diagnosed as Irreducible Right inguinal hernia
- After informed consent , patient underwent surgery under SA
- Right inguinal canal opened and an irreducible indirect inguinal hernia was found
- On opening of sac appendix with no signs of inflammation with Omental adhesions to hernia sac noted( fig 1 and fig 1.1)
- Omental adhesiolysis followed by appendix was reduced, hernia was repaired with tension free polyproplene mesh



**Fig-1** Shows Appendix, Omental Adhesions with sac



**Fig-1.1** Adhesiolysis done, appendix as content

**Case Report 2**

- 37yrs old male patient presented to surgical emergency with c/o pain in right groin since 3 days, h/o swelling in right groin since 8years

Swelling initially reducible but for the past 3days swelling doesn't reduce

h/o right groin pain of insidious onset, dragging type of pain initially around the umbilicus later shifts to right groin

h/o fever since 2days

h/o vomiting 2 episodes, non bilious

Usg abdomen showed irreducible inguinal hernia with blind tubular aperistaltic structure present

Complete blood count showed leucocytosis and neutrophilia

Diagnosis of irreducible hernia was made patient started on parenteral antibiotics before surgery

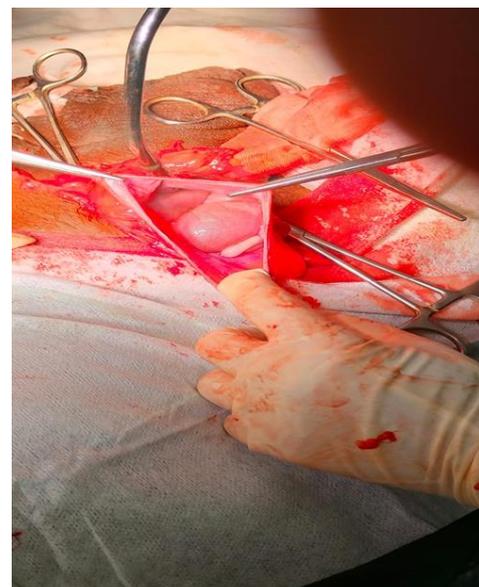
- Right inguinal crease incision given, opened in layers hernia sac separated from cord structures
- Contents of sac includes caecum with inflamed tip of appendix and adhesions to sac (fig 2.0)
- Adhesiolysis and appendectomy was performed herniorraphy done by modified bassini's technique
- Post operative period was uneventful
- Patient discharged on 8<sup>th</sup> post operative day without any complications



**Fig 2.0** Inflamed appendix as content

**Case Report 3**

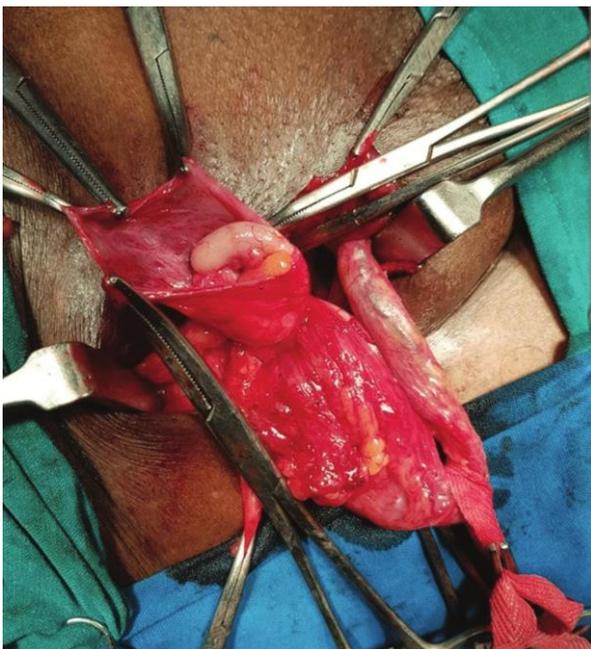
- 64yrs old male patient presented to surgical opd with right sided complete inguinal hernia since 3 years
- c/o pain 5 days insidious onset which is dragging type
- No fever, no vomiting
- On examination hernia was Indirect complete partially reducible inguinal hernia
- Ultrasound showed herniation of bowel loops through defect of 5 cm up to bottom of right scrotum
- Standard right inguinal incision was made, hernia sac separated from cord structures
- Sac opened Ileo-caecal junction with normal appendix was found and content being reduced
- Sac closed and lichenstein's tension free hernioplasty was done
- Post operative period was uneventful
- On pod 5 patient got discharged, wound healthy
- 1 year follow up done and reported with no complaints



**Fig 3** Normal appendix in hernia sac

#### Case Report 4

- 57 years old male patient presented to surgical emergency with pain in right inguinal region for past 3 days. h/o swelling in right inguinal region since 1 year which was initially smaller in size gradual progressive to present size. fever for 2 days , 2 episodes of non bilious vomitings present
- Swelling was reduces initially but for the past 1 day swelling doesn't reduces on lying down position
- Usg abdomen showed herniation of bowel loop with to and fro peristalsis
- Lab investigations showed total count was raised (14500/mm<sup>3</sup>)
- Patient posted for emergency exploration. After opening of sac , serosanguinous fluid with inflamed appendix was found along with caecum and omental adhesions (fig 4) . Adhesiolysis and appendectomy was done with partial omentectomy
- Modified bassini's procedure was performed
- Post operative period was uneventful and treated with i.v broad spectrum antibiotics ,analgesics and other supportive care



**Fig 4** inflamed appendix with adhesions

#### Discussion

- Most common in inguinal hernia content being bowel or omentum is observed
- Among the unusual contents are bladder, meckel's diverticulum(litter's hernia) portion of circumference of intestine (ritcher's hernia)but amyand's hernia (appendix as content) is relatively unknown despite being first reported in 1735 by Claudius amyand
- In most of patients who present with a right sided amyand's hernia its location can be explained by normal anatomical position
- However, left-sided Amyand's hernia have been reported,<sup>[4]</sup> whereas only 0.1% of all cases of acute appendicitis present in an inguinal hernia, underscoring the rarity of the condition.<sup>[5]</sup>
- Pathophysiology of amyand's hernia is unknown. weber et al proposed that due to herniation the appendix can be vulnerable to microtrauma causing adherence to hernia sac due to fibrosis.
- Inflammatory swelling may lead to incarceration subsequent impaired blood supply and bacterial overgrowth
- Muscle contractions and changes in abdominal pressure can cause compression of appendix resulting in blood supply and secondary inflammation.
- Absence of preoperative diagnosis<sup>[8]</sup> in such cases due to the lack of usage of computed tomography scan<sup>[9]</sup> and MRI in our country, and mostly the diagnosis is intraoperative as the patient undergoes surgical exploration for a complicated or a simple inguinal hernia.

The Losanoff-Basson classification<sup>[6]</sup> as shown below

Type of hernia	Description	Surgical management
<b>Type 1</b>	Normal appendix in an inguinal hernia	Reduction or appendectomy and mesh plasty
<b>Type 2</b>	Acute appendicitis in an inguinal hernia with no abdominal sepsis	Appendectomy and primary repair with no mesh
<b>Type 3</b>	Abdominal sepsis	Laparotomy and appendectomy with primary repair
<b>Type 4</b>	Acute appendicitis in an inguinal hernia with concomitant abdominal pathology	Laparotomy and appendectomy, primary hernia repair and management of abdominal pathology

### Conclusion

- Amyand's hernia is rare presentation of inguinal hernia and its diagnosis is usually based on incidental finding intra operatively
- It is widely accepted that, if appendicitis exists, the repair of the hernia should be performed with modified Bassini or Shouldice techniques, without making use of synthetic meshes or plugs within the defect<sup>[6]</sup> in an infected field owing to the high risk of suppuration of such materials.<sup>[7]</sup> Management should be individualized according to appendix's inflammation stage, presence of abdominal sepsis and co-morbidity.
- In the cases where an inflamed, suppurative or perforated appendicitis seen, no prosthetics material should be used because of increased risk of SSI

### References

1. Greenberg J, Arnell TD. Diverticular abscess presenting as an incarcerated inguinal hernia. *Am Surg* 2005;71:208-9.
2. Amyand C. Of an inguinal rupture, with a pin in the appendix caeci incrusted with stone, and some observations on wound in the guts. *Philos Trans Royal Soc* 1736;39:329-42.
3. Komorowski AL, Moran Rodriguez J. Amyand's hernia. Historical perspective and current considerations. *Acta Chir Belg* 2009;109:563-4.
4. Ravishankaran P, Mohan G, Srinivasan A, Ravindran G, Ramalingam A. Left sided Amyand's hernia, A Rare Occurrence: A Case report. *Indian J Surg* 2013;75:247-8.
5. Malayeri AA, Siegelman SS. Amyand's Hernia. *N Engl J Med* 2011;364:2147.
6. Losanoff JE, Basson MD: Amyand hernia: A classification to improve management. *Hernia* 2008;12:325-6.
7. Milanchi S, Allins AD. Amyand's hernia: History, imaging, and management. *Hernia* 2008;12:321-2.
8. Anagnostopoulou S, Dimitroulis D, Troupis TG, Allamani M, Paraschos A, Mazarakis A, et al. Amyand's hernia: A case report. *World J Gastroenterol* 2006;12:4761-63.
9. Luchs JS, Halpern D, Katz DS. Amyand's hernia: Prospective CT diagnosis. *J Comput Assist Tomogr* 2000;24:884-6