Acute scrotum: A rare presentation

**Jayalaxmi S. Aihole, Narendrababu M., Deepak J.,
Vinay Jadhav, Ramesh S.**

ABSTRACT

Introduction: Amyand's hernia (AH) is an inguinal hernia containing the appendix, which is normal or inflamed. This condition is extremely rare in children, especially in infants. This phenomenon was described in 1735, when Claudius Amyand performed a successful appendectomy on an 11 year-old boy who presented with an appendix in hernia sac; so, in his honor, his name was given to this type of hernia. It is seldom diagnosed preoperatively due to its unusual and infrequent clinical presentation; management involves herniotomy and appendicectomy if indicated.

Case Series: We are reporting two cases of AH, one in a four-year-old presented with partially reducible hernia; and another in a neonate who presented with acute epididymo-orchitis like picture.

Conclusion: Preoperative diagnosis of AH is rare but not very difficult with the current radiological investigations. Choice of the operation is appendectomy if appendix is inflamed, and herniotomy.

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Introduction: Amyand's hernia (AH) is an inguinal hernia containing the appendix, which is normal or inflamed. This condition is extremely rare in children, especially in infants. This phenomenon was described in 1735, when Claudius Amyand performed a successful appendectomy on an 11 year-old boy who presented with an appendix in hernia sac; so, in his honor, his name was given to this type of hernia. It is seldom diagnosed preoperatively due to its unusual and infrequent clinical presentation; management involves herniotomy and appendectomy if indicated. **Case Series:** We are reporting two cases of AH, one in a four-year-old presented with partially reducible hernia; and another in a neonate who presented with acute epididymo-orchitis like picture. **Conclusion:** Preoperative diagnosis of AH is rare but not very difficult with the current radiological investigations. Choice of the operation is appendectomy if appendix is inflamed, and herniotomy.

Jayalaxmi S. Aihole¹, Narendrababu M.², Deepak J.¹, Vinay Jadhav¹, Ramesh S.³

Affiliations: ¹Assistant Professor, Department of Pediatric Surgery, IGICH Bangalore, Karnataka, India; ²Associate Professor, Department of Pediatric Surgery, IGICH, Bangalore, Karnataka, India; ³Professor and HOD, Department of Pediatric Surgery, IGICH, Bangalore, Karnataka, India.

Corresponding Author: Dr. Jayalaxmi Shripati Aihole, Assistant Professor, Department of Pediatric Surgery, IGICH Bangalore, Karnataka, India; Email: jayalaxmisaihole@yahoo.com

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INTRODUCTION

Amyand's hernia (AH) is an inguinal hernia containing the appendix. This condition is rare in children, especially in infants. Claudius Amyand, in 1735, performed appendectomy while doing herniotomy in an 11-year-old male child; and hence his name. Preoperative diagnosis is rare and management involves herniotomy and appendectomy if indicated.

We are reporting two cases of AH, one in a four-year-old presented with partially reducible hernia; and another in a neonate who presented with acute epididymo-orchitis like picture.

On opening the hernia sac, appendix was revealed. Herniotomy and appendectomy was done.

CASE SERIES

Case 1: A four-year-old boy presented with inguinoscrotal swelling since one year. Pain was felt on and off recently with increase in its size since one week. Both testes were palpable separately. The swelling was partially reducible. Systemic examination was normal. Patient was electively posted for right herniotomy and on opening the sac, long tubular minimally inflamed appendix with hydrocele fluid was noted. Patient underwent appendectomy, herniotomy and Jaboulay's

eversion of distal sac. Patient is doing well with two and a half years of follow-up.

Case 2: A 20-day, weighing 3.0 kg male neonate was brought to us with history of right scrotal swelling, excessive crying and fever of one day duration. His antenatal scans were normal and he was delivered at term by vaginal route. Clinical examination revealed reddish tender swelling of right scrotum with left scrotum with testis was normal. Abdominal examination was normal. The scrotal Doppler ultrasound revealed features of acute epididymo-orchitis with normal testicular blood flow and associated secondary hydrocele (Figure 1A–B). Hence the baby was managed expectantly with antibiotics and analgesics; complete resolution of the acute scrotum was noticed during follow up visit.

Two weeks later in the follow-up period the baby was brought with small painless, reducible inguinal swelling; clinical diagnosis of hernia was made and herniotomy was done. Intra-operatively appendix was noted in the hernia sac, its tip reaching the scrotum and had tell-tale evidence of past appendicular inflammation. Baby underwent appendectomy with herniotomy (Figure 2A–

B) had uneventful postoperative period and doing well at first month follow-up visit.

DISCUSSION

Amyand's hernia is an extremely rare condition. The rate of incidence is 0.1% of herniotomies. AH in less than one year old represent 2% of the total cases of appendicitis [1]. The pathophysiology of AH and its relationship with appendicitis are unknown [2, 3]. AH, as a rule, occurs in the right inguinal region. If left sided, it may be due to mobile cecum, malrotation, or situs inversus. The presence of a non-inflamed appendix in the inguinal hernia is three times more common in the children than in adults. This is due to persistent patency of the processus vaginalis in infancy and adulthood [2]. A congenital band extending from the appendix into the scrotum and attached to the right testis, and the funnel shaped tapering of the cecum in the neonate are two more possible pathogenetic factors [2].

Clinical presentation of an AH may be that of a normal, obstructed, or strangulated inguinal hernia, irrespective of whether the appendix is inflamed or not. Acute scrotum and abdominal pain are possible clinical presentations. Testicular torsion, especially when there is an undescended testis; inguinal lymphadenitis; epididymo orchitis and hydrocele of the spermatic cord are conditions that an AH may mimic.

The confirmatory diagnosis of an AH is made during surgical exploration of the groin, although radiological investigations like ultrasound, computed tomography will be helpful in few cases [1].

Even though appendectomy can be performed through an inguinal incision or with laparoscopy, many authors prefer to save the appendix when it is not inflamed, because of the importance of the lymphoid tissue in it, risk of wound infection and for its possible later use in urinary diversion, biliary tract reconstruction, and for antegrade bowel enemas [1]. Both of our patients had features of appendicitis and in the neonate the Amyand's hernia with acute appendicitis presented as acute scrotum masquerading as epididymo-orchitis. Hence appendicectomy was done in both the patients and they had an uneventful postoperative course.

Neonatal appendicitis is extremely rare (0.1% of appendicitis cases in infancy, which constitutes 2% of pediatric appendicitis). Premature neonates accounts 50% of these cases, and only in one third of these, inflamed appendix lies within a hernia. This low frequency rate and the fact that only 20 of neonatal cases of AH have been reported in English publications render the cases of perforated appendix in premature neonates extremely rare [2].

Classification of AHs, after Losanoff and Bason, modified by Rikki as Rikki's classification of Ahs described in Table 1. Both of our cases belong to type 2 [4].

Figure 1: (A, B) Ultrasonography showing acute epididymo-orchitis changes with secondary hydrocele fluid.

Figure 2: (A) Hernial sac containing appendix, (B) Appendectomy specimen.

Table 1: Classification of Amyand's hernias, After Losanoff and Basson, modified by Rikki as Rikkis classification of Amyand's hernias

Classification	Description	Surgical Management
Type 1	Normal appendix within an inguinal hernia	Hernia reduction, mesh repair, appendectomy in young
Type 2	Acute appendicitis within an inguinal hernia, no abdominal sepsis	Appendectomy through hernia, primary repair of hernia, no mesh
Type 3	Acute appendicitis within an inguinal hernia, abdominal wall, or peritoneal sepsis	Laparotomy, appendectomy, primary repair of hernia, no mesh
Type 4	Acute appendicitis within an inguinal hernia, related or unrelated abdominal pathology	Manage as types 1 to 3 hernia, investigate or treat second pathology as appropriate
Type 5a	Normal appendix within an incisional hernia	Appendectomy through hernia, primary repair of hernia including mesh
Type 5b	Acute appendicitis within an incisional hernia, no abdominal sepsis	Appendectomy through hernia, primary repair of hernia
Type 5c	Acute appendicitis within an incisional hernia, abdominal wall, or peritoneal sepsis or in relation to previous surgery	Manage as type 4

Literature suggests that majority will present in neonate, as obstructed or strangulated inguinal hernia and even with perforation with generalized peritonitis, systemic signs and symptoms of appendicitis are rarely evident. Our case presented like epididymo-orchitis like picture i.e. acute appendicitis [1,3].

Antonios Panagidis reported neonatal perforated AH presenting as an enterocutaneous scrotal fistula [2]. Kumar et al. reported neonatal pyoscrotum and perforated appendicitis in 26 day old male baby with undescended testis, who was initially diagnosed to have

testicular torsion [5]. Luchman et al. reported a case of scrotal abscess following perforated appendicitis in six day old male neonate [6].

CONCLUSION

Amyand's hernia (AH) is very rare and appendicitis in AH in neonates is extremely rare. Preoperative diagnosis is difficult unless presenting with appendicitis or its related complications. Herniotomy and appendectomy, when indicated are recommended.

Author Contributions

Jayalaxmi S. Aihole – 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

Narendrababu M. – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Deepak J. – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Vinay Jadhav – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Ramesh S. – Analysis and interpretation of data, 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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ABOUT THE AUTHORS

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Jayalaxmi Shripati Aihole is Assistant Professor at Department of Pediatric Surgery, Indira Gandhi Institute of Child Health Institute, Rajiv Gandhi University of Health Sciences, Bengaluru, India. She earned the undergraduate degree (MBBS) from Karnataka Institute of Medical Sciences, Karnataka University of Dharwad, HUBLI, India and postgraduate degree form (General Surgery) from Vijayanagar Institute of Medical Sciences, Rajiv Gandhi University of Health Sciences, Bellary, India. Mch in Pediatric Surgery from Kasturba medical college, Manipal, Manipal University, India. She has published one in national and three in international journals. Her research interests include urethral duplication and biliary atresia.

E-mail: jayalaxmisaihole@yahoo.com, jaihole4@gmail.com

Narendrababu M. is Associate Professor in pediatric surgery at Indira Gandhi Institute of child health, Bangalore, Karnataka, India. He earned the undergraduate degree, MBBS from Government medical college Bellary and postgraduate degree, Masters in general surgery from Government medical college Bellary, Gulbarga university in the state of Karnataka, India. He Completed his Paediatric surgery training (Mch paediatric surgery) from Grants medical college, Bombay in the year 2002. He was stecker's exchange scholar at Nationwide children's in Columbus Ohio, USA. He has published eight research papers in national and international academic journals and co-authored one book. His research interests include vesicoureteric reflux, hypospadias and neurogenic bladder dysfunction. He intends to pursue pediatric urology in future.

E-mail: drnarendrababum88@gmail.com

Deepak Javaregowda is Assistant Professor at Name of Department of Pediatric Surgery, Indira Gandhi Institute of child health, RGUHS, Bengaluru, India. He earned the undergraduate degree MBBS from Mysore Medical college, RGUHS, Mysore, India and postgraduate (General Surgery) degree form from Bangalore Medical College, RGUHS, Bengaluru, India. Mch in Paediatric Surgery from Sri Ramachandra Medical College, Chennai, India. DNB in Pediatric Surgery. PGDMLE from National law school of India University, Bengaluru. He has published five research papers in national journals. His research interests include Pediatric surgical oncology, paediatric neurosurgery. He intends to pursue PhD's, Postdocs in pediatric surgical oncology in future.

E-mail: drdeepak@yahoo.co.in

Vinay Jadhav is Assistant Professor in Department of Paediatric Surgery at IGICH, RGUHS, Bengaluru, India. He earned the undergraduate degree (MBBS) from JJMMC, Kuvempu University, Davanagere, India) and postgraduate degree form (Masters in General Surgery) from AIMS, RGUHS, Bengaluru, India. Mch in pediatric surgery From King Edward Memorial Hospital, Mumbai, India. He has published research papers in national 5 and 7 international academic journals. His research interests include (Pediatric urology). He intends to pursue for PhD's/Postdocs in paediatric urology in future.

E-mail: drvinay_jadhav@yahoo.co.in

Ramesh S. is Professor and HOD, Department of Pediatric Surgery, IGICH, Bangalore, Karnataka, India.

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