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Unusual Rare Littre's hernia in Recurrent Inguinal Hernia a Case Report

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Abstract

Any hernia containing Meckel's diverticulum is called Littre's hernia. Littre's hernia (LH) in recurrent inguinal hernia (RIH) is extremely rare or probably unknown in literature. Littre's hernia is very rare, with an estimated incidence of LH of 0.09 % in strangulated or incarcerated hernias. In the last 300 years, about 50 cases of (LH) have been reported since it was first described in 1700 by a French anatomist and physician, Alexis de Littre, who reported 2 cases during his career. The diagnosis is unlikely to be made preoperatively. We present a case of a young male, 22 years old, with a history of right inguinal herniotomy 12 years ago, he presented with symptoms and signs of acute intestinal obstruction due to recurrent right inguinal hernia. Urgent exploration was carried out via right inguinal incision, the hernial sac was opened, and the contents of the sac was small bowel with Meckel's

diverticulum, diverticulectomy, hernioplasty, and unabsorbable mesh were implanted. The patient did well, free of symptoms for three months. It is generally agreed that surgical resection of Meckel's diverticulum is the treatment of choice when encountered during emergency repair of Littre's hernia.

Keywords: Littre's hernia, Meckel's diverticulum, intestinal obstruction, recurrent inguinal hernia, vitelline duct.

Introduction

Littre's hernia (LH) is an extremely rare condition, found in literature. Its estimated incidence is 0.09 % in incarcerated / Strangulated (I/S) hernia. It may be seen as a complication of Meckel's diverticulum (MD) in less than 1% [1]. In adults, as an inguinal (50 %), usually on the right side, femoral (20 %), and umbilical (20%). In children, it is thought to be more common to have them occur in umbilical hernia, and the MD is more prone to adhere to the sac [1,2].

MD is a true diverticulum, it is the most common Congenital anomaly of the gastrointestinal tract, located in the antimesenteric border of the ileum, it is a remnant of the vitelline duct with an incidence of 0.6-4 % in general population. MD can be described roughly by the rule of 2, accordingly, it is present in 2 %, 2 feet from ileocecal valve, 2 cm diameter, usually diagnosed under 2 years, 2 times frequent in males and symptomatic in 2% of the population. In one series reported in 2020 less than 50 cases have been reported in the last 300 years [3]. Given the rare incidence of LH, it has been suggested that every case, how it is presented, its diagnosis, and its management should be documented [3]. In other series only 89 cases have been reported in the PubMed database searched on 5 March 2022 [4]. less than 90 cases have been reported between 1700- 2022 in the PubMed database [4]. Although 90 % of MDs are asymptomatic, yet the remaining 10 % Can cause many complications, namely, intestinal obstruction in (14-53%), due to hernia, intussusception, volvulus, and adhesion band to the umbilicus, other complications are bleeding, diverticulitis, and the least is perforation which is less than (4 %). In symptomatic MD, treatment is always surgery which has a morbidity of (13%) and mortality less than (1%), while in asymptomatic MD surgery, morbidity is (20 %) and mortality is (3%), i.e., it is higher. In one series results showed a high prevalence of complication described, up to (38.46%) in patients intraoperatively with strangulation or

perforation being present. The most commonly performed type of operation, was MD resection followed by bowel resection, while a minority of cases (5.4%) remained unresected. A mortality of (8.7 %) was found in patients who underwent bowel resection with a relatively high number of reports of ectopic tissue were seen (21.21%), ulceration (12.12%), and tumors in (9.09%) were found [4,5].

Case Presentation

A 22 - year - old male patient presented to our emergency department in AL-Thawra hospital, Taiz, Yemen, complaining of acute colicky lower abdominal pain and painful right groin swelling. It was associated with greenish vomiting, and constipation for the last 18 hours, he had 2 similar attacks of abdominal pain a few months back, but no rectal bleeding or weight loss. He had a recurrence of a right inguinal hernia operated 12 years ago. There was no history of genetic disorder or a history of bowel disease. He has neglected recurrent scrotal hernia for the last few years.

clinical examination:

During the initial evaluation, the patient was pale, looked ill, and was febrile, with a temperature of 38C, PR 100 / minute, Blood pressure 110/60 mmHg, respiratory rate 16/min.

The abdomen was moderately distended, with a right inguinal scar due to a previous hernia operation 12 years ago. There was tenderness at the hypogastrium and right iliac fossa, abdomen is tympanic on percussion, there is tender right inguinoscrotal swelling, irreducible, tense, and bowel sounds were exaggerated.

Diagnostic assessment:

Blood examination showed moderate leukocytosis 14×10^3 and neutrophilia 80 %, with normal liver and renal functions as well as electrolytes (fig. 1,2).

EKG was normal except for mild sinus tachycardia 100 beats/minute.

Erect abdominal radiographs demonstrated multiple air-fluid levels denoting small bowel obstruction (fig. 3).

HAEMATATOLOGY			
Test	Result	Normal	Unit
C.B.C			
Hb	14.5	M 10Y-20DY 15.0 - 24.0 M 1MO-23MO 10.5 - 14.0 M 2YR-9YR 11.5 - 14.5 M 10YR-17YR 12.5 - 16.1 M 18YR-108YR 13.5 - 18.0	g/dl
R.B.C count	5.0	M 4.5 - 6.5	cell/mm ³
P.C.V	43.5	M 1DY-20DY 44.0 - 70.0 M 1MO-23MO 32.0 - 42.0 M 2YR-9YR 33.0 - 43.0 M 10YR-17YR 36.0 - 47.0 M 18YR-108YR 42.0 - 52.0	%
M.C.V	89.9	M 82 - 98	f
M.C.H	30.8	M 27 - 32	pg
M.C.H.C	33.7	M 30 - 35	g/dl
W.B.C	14.0	M 4.0 - 11.0	mm ³
Differential count:			
Neutrophils	80	M 40 - 70	%
Lymphocytes	17	M 20 - 45	%
Monocytes	02	M 2 - 10	%
Eosinophils	01	M 1 - 6	%
Basophils	00	M 0 - 1.0	%
Platelets count	338	M 150 - 450	+10 ³ c
C.T	5:00	M UP TO 8	mi
B.T	3:00	M UP TO 6	mi

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Fig.1 CBC

BIOCHEMISTRY			
Test	Result	Normal	Unit
L.F.T			
Alkaline phosphatase	201	M ADULT < 270 M 1DY-1DY < 250 M 2DY-5DY < 231 M 6DY-6MO < 448 M 7MO-1YR < 462 M 2YR-3YR < 281 M 4YR-6YR < 269 M 7YR-12YR < 300 M 13YR-17YR < 390 M 1DY-12MO 1.0 - 10.0 M 1YR-110YR 0.3 - 1.2	U/L
T.bilirubin	0.8		mg/dl
K.F.T			
Creatinine	1.0	M 0.6 - 1.4 Neonates : < 0.88	mg/dl
Electrolytes:			
✓ Sodium	120	M 135 - 145	mmol/L
✓ Potassium	3.9	M 3.5 - 5.5	mmol/L
R.B.S	168		mg/dl
SEROLOGY			
Test	Result	Normal	Unit
C.R.P	Positive 1/12	< 6	mg/dl
A.S.L.O	Positive 1/800	< 200	IU/mL
HBsAg	Negative		
HIV(1,2)	Negative		
HCV	Negative	Negative	
Blood group :-	(O)+ve Rh (Positive)		

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Fig.2 Biochemistry



Fig.3 Abd. Radiography

Diagnosis: a provisional diagnosis of recurrent, incarcerated / strangulated right scrotal hernia was made, causing small bowel obstruction, depending on history, physical examination, laboratory findings and abdominal radiography.

The decision was made for urgent surgical intervention after resuscitation.

Preoperative therapeutic intervention: performed with 1-liter intravenous normal saline, 1 gram ceftriaxone, 500-mg infusion of metronidazole, nasogastric suction, and indwelling Foley catheter.

Surgical intervention:

Urgent exploration of the hernia was performed via right inguinal incision, a hernial sac was delivered to the wound, and opened, it contained small bowel loops, and Meckel's diverticulum. The bowel loops were slightly bluish, no gangrene, soon regained pink color after release of constriction, I performed transverse diverticulectomy, the bowel reduced to the abdomen, herniotomy, and repair was concluded with non-absorbable mesh graft (Fig. 4-8).

Postoperatively, the patient had an uneventful recovery, with gradual return of bowel function within 48 hours, a soft diet was started, well tolerated, and he was discharged from the hospital, on the fifth postoperative day, followed up for three months he had no complaints.

Histopathology report of MD was intestinal type of lining with islets of ectopic gastric tissue.



Fig.4
Recurrent scrotal hernia
With scar of previous
surgery



Fig.5
Meckel's Diverticulum



Fig.6
Post op.

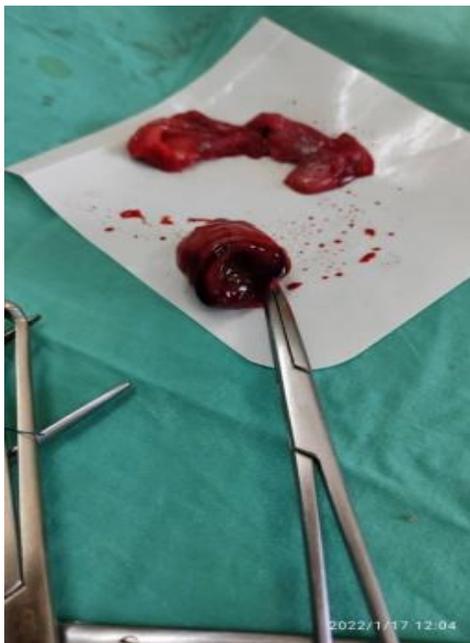


Fig. 7
Excised Meckel's diverticulum



Fig.8
Repair with Mesh graft

Discussion

This paper describes a successful surgical intervention in a rare case of recurrent inguinal hernia, which was found to be Littre's hernia. From my personal experience over 20 years, with more than 700 hernia operations, this was the first case of Littre's hernia I have encountered. The presence of LH in a recurrent groin hernia is not recorded in the PubMed

database search I performed recently, and this case perhaps is the first case to be recorded up to my knowledge.

In literature, during the management of LH, it is always advised to resect the MD. This is on the basis that Littor's hernia may possibly be a complication of MD (1%) [2-4]. Park JJ et al. of Mayo clinic [5] performed a review of 1476 patients who had MDs between 1950-2002, he found that (84%) of MD were found incidentally during an operation and they were asymptomatic. Certain features are associated with symptomatic MD, which are also prone to develop future complications and they are called Park's criteria. The presence of Park's criteria increases the risk of MD being symptomatic and associated with more complications. These criteria are (1) patients who are younger than 50 years, (2) male sex, (3) diverticulum length greater than 2cm, (4) ectopic or abnormal features within a diverticulum. The data collected showed that when one criterion was met the overall portion of symptomatic MD was (17 %), when two, three, or all four criteria were met, the proportion of MD being symptomatic increased to (25 %), (42%) and (70 %) respectively [5]. when dealing with LH, the MD should always be excised, either by simple transverse, wedge diverticulectomy in uncomplicated cases, or intestinal segmental resection with primary ileo-ileal anastomosis should be attempted if there is necrosis, gangrene, intestinal ischemia, palpable ectopic tissue at diverticulo- intestinal junction, or perforation, the later carries higher mortality about (10 %) [5-7].

Park JJ et al. found that the most common clinical presentation of MD in children was bowel obstruction due to intussusception or umbilical band, while in adults, it was bleeding followed by diverticulitis. The average incidence of complications of MD in adults is around (10%). They include obstruction (14-53%), bleeding (38%), diverticulitis (28%), ulceration, and rarely perforation [5-7]. The persistence of the vitelline duct in children may lead to the formation of MD fistula, umbilical sinus, or band obstruction. It is unlikely that LH will be diagnosed preoperatively, but it should be kept in mind. Resection of MD and hernia repair with a non-absorbable Mesh graft [7-8] is the treatment of choice as in our case. The World Society of Emergency Surgery (WSES) in 2017 guidelines for abdominal wall hernia recommend emergency surgery when intestinal strangulation is suspected usually in the form of, resection of MD, herniotomy, and placement of non-absorbable mesh graft in a clean contaminated surgical field due to low risk of infection and prevention of recurrence [8].

Another study from Japanese literature, executed on 600 patents of MD by Yamaguchi et al. also showed that the most common complication in all ages is obstruction (36.5%) [9,10].

There are no characteristic diagnostic clinical symptoms or signs to differentiate LH from other hernias. However, a history of rectal bleeding, incomplete manual reduction of groin hernia, and fecal fistula should alert the surgeon of LH possibility. Many surgeons concluded that it may not be possible to diagnose LH preoperatively even with the aid of multiple sophisticated, expensive imaging modalities that are not readily available in most clinical centers, and most of the patients are of poor socioeconomic status, they cannot afford such expensive investigations [3]. However, Sinha in the UK reported the first case of incarcerated Littre's hernia diagnosed on computerized tomography, in 2005, but it is very rare [11-12]. There is no significant treatment difference in diagnosing LH preoperatively in our daily practice, except for academic interest.

Surgeons, therefore, have to rely on clinical examination and basic investigations. In our case, the patient presented with acute painful groin swelling and signs of mechanical intestinal obstruction. Simple abdominal radiographs, with basic blood investigations and the clinical presentation, were enough to diagnose intestinal obstruction due to recurrent strangulated groin hernia. When symptomatic MD is encountered, the treatment is always resection, of course with a higher rate of mortality and morbidity (10). Most surgeons favor prophylactic resection due to lower morbidity and to prevent future potential life-threatening complications - especially if they fulfill Park's criteria of MD.

Conclusion

The clinical features and presentation of LH is similar to any other hernia.

Littre's hernia is a very rare and serious condition if treatment is delayed. Preoperative diagnosis is a big challenge. Our case was admitted as acute intestinal obstruction due to recurrent inguinal hernia. The diagnosis of Littré's hernia was made intraoperatively, histopathology showed the intestinal type of epithelium, with islands of gastric mucosa. Similar case was not found in my recent search held in the PubMed database for Yemen. Manual reduction maneuvers should be avoided in such incarcerated hernias, and MD in LH should always be managed as symptomatic and be resected. Minimally invasive technique is another option in treating this type of hernia.

Competing interests:

The author declares no competing interests.

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Informed consent:

Written informed consent was obtained from the patient for participation in our study.

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