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Case Report

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Giant Inguinal Hernia Repair with Mesh in A Primary Care Facility in Ghana

John Kanyiri Yambah

University Health Services, University of Education, Winneba, Ghana.

*Corresponding author: John Kanyiri Yambah; *yambahjohn@yahoo.com*

Abstract

Giant Inguino-Scrotal Hernia (GISH) results and is aggravated by undue delay in seeking surgical care when an inguinal hernia develops. This poses special challenges to surgeons in rural settings. Their management in deprived rural settings has not previously been described in Ghana. A case report on the management of type 2 GISH in a 47-year-old farmer in a district hospital is described and discussed within the context of current literature.

Keywords: ***Giant Inguino-Scrotal Hernia, Mesh herniorrhaphy, primary care.***

Introduction

A GISH is one that extends below the midpoint of the inner aspect of the thigh in the erect posture. These are generally rare variants of a widespread medical condition, inguinal hernia [1]. GISHs are more common among rural dwellers and in areas that fear of or access to medical care is a challenge [2-4]. The agrarian nature of African rural work, where physical straining is used for nearly all activities, further contributes to the prevalence of GISH in rural settings. Aside from normal complications of any inguinal hernia, GISH poses special challenges to the patient and surgeon in the pre-op, intra-op and post-op periods. Sufferers of this condition commonly present with challenges in sitting, lying and walking. Some also report that other simple tasks such as urination becomes daunting, as the penis commonly is buried and the patients dribble on themselves and ulcers may develop on the scrotal skin [2,5,6]. They also complain of challenges with coital activity [7]. Consequently, the condition poses a great psychological strain on them [2]. The severest complication, strangulation, may be fatal if not attended to expeditiously [8,9]. Other dangers include ipsilateral testicular necrosis [6,10] and this is besides intestinal obstruction, strangulation of content and pain that all other hernias may usually cause. Surgical management of this condition requires meticulous planning for good outcomes as a number of special challenges warrant attention. These include unusual content such as stomach, ureters, spleen or colon or spleen, [11,12] whether the content is reducible or not, [5,10,13] the increased intraabdominal pressure from loss of domain [4,10,11,14,15] and management of the redundant scrotum [5,10,16]. Apart from one instance where a giant hernia of inguinal origin was described in a teaching hospital, [17] little is documented on the specific management of these cases at the district primary care level where most of the hernia surgeries are performed in Ghana [18]. This case report describes a 47-year-old who presented with type 2 GISH in a district hospital and underwent successful mesh herniorrhaphy without the need for organ resection and who did not develop any post-op complications.

Case Report

A 47-year-old farmer presented with an increasing right groin mass he noticed 20 years ago. The mass has increased over the years and is almost down to his right knee. The mass is reducible when he is recumbent but immediately recurs on standing. He reports occasional abdominal pain. He did not have chronic constipation and did not have a chronic cough. He did not have a difficulty urinating aside manipulation to handle the penis during the process. He did not smoke.

General examination findings were normal. However, in the right groin a mass extending from the right lower abdomen into the scrotum was seen as in Figure 1.

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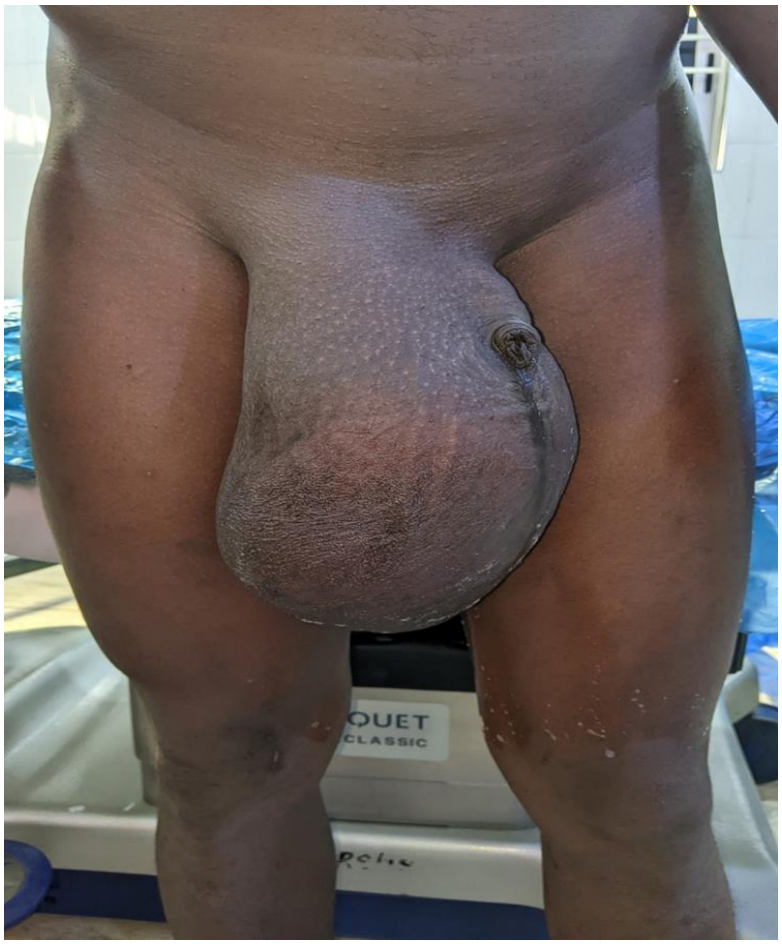

Figure 1 type 2 GISH of the patient

The mass measured 45 cm x 22 cm. It was non tender and reducible. Peristaltic movement could be seen on the mass. The mass had a visible cough impulse. The two testicles were nontender and about 5cm x 3cm each. There was no inguinal lymphadenopathy bilaterally. A diagnosis of Type 2 GISH was made and he was prepared for surgery.

After spinal anesthesia, a para-inguinal skin crease incision was made and dissected to reveal a viable caecum and ileum as shown in Figure 2.

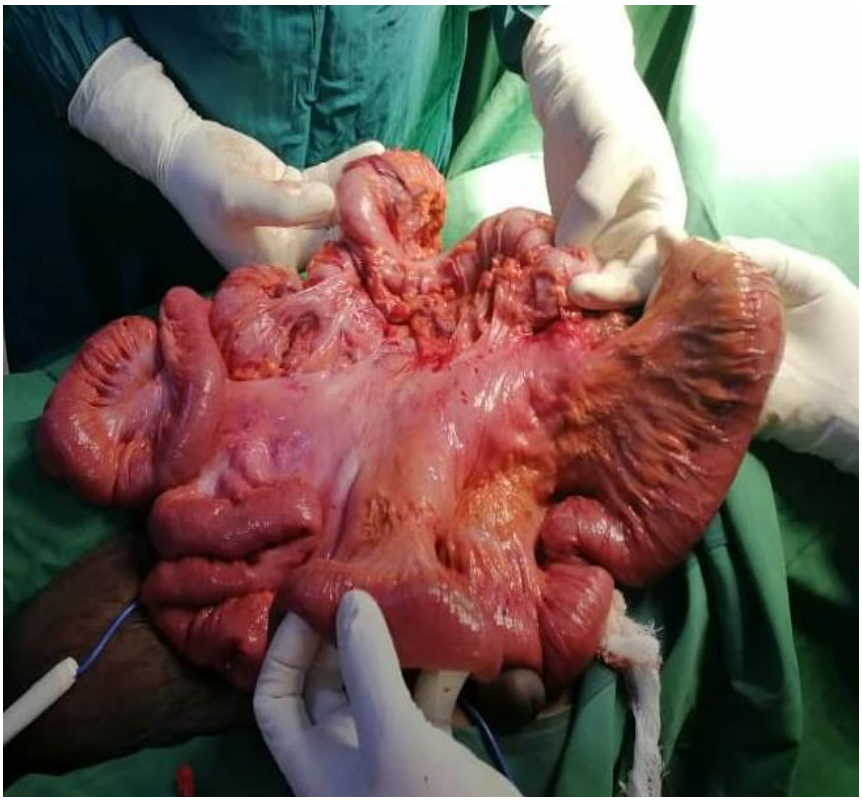

Figure 2: content of sac of the giant inguinoscrotal hernia; cecum and iluem

The sac was gently dissected off the cord as shown in Figure 3.

Figure 3: Sac of GISH

Standard repair that entailed transfixing the base of the transected sac to the posterior surface of the adjacent internal oblique muscle was carried out. Moreover, the posterior surface was overlayed with prolene mesh attached to the inguinal ligament, conjoint tendon and internal oblique with a slit to allow for the exit of the cord to the viable right testicle. The redundant scrotum was wrapped with creppe bandaging for 1 day and he was advised to wear closely fitting underwear.

Post surgery, there were no cardiorespiratory complications aside from bearable incisional pain. He was discharged home the next day on antibiotics (amoxicillin) and analgesics (diclofenac). Follow-up after three months did not reveal any challenges.

Discussion

GISHs, defined by the extension of the sac beyond the inner mid-thigh, [12,13] are rare. Although current data is lacking, GISHs are more common in Sub Saharan Africa and other low and lower middle income countries. Although many classifications exist in the literature, they are predicated on the degree of extension below the mid-thigh. Type 1 GISH extends below the mid-thigh but not beyond an imaginary line between the mid-thigh and the patellar. Type 2 GISH extends beyond the mid-thigh but not beyond the upper margin of the patellar. Type 3 GISH extends beyond the upper margins of the patellar. This classification helps the surgeon plan for additional procedures as type 2 and type 3 GISHs may require [13,15]. It should however be stressed that surgical management is individualised as some GISH may only require a hernioplasty [19,20] like in this case report.

GISH aside surgical concerns, which are extensively discussed by other authors [4,5,10-16] have psychocial and economic impacts on afflicted persons. For example, it is known that hernia is more prevalent in farmers and rural dwellers who are mostly low income earners [2]. This situation, together with the exclusion of surgical mesh from the benefits package in Ghana's health insurance scheme and the extensive prohibitive out-of-pocket payments in the health system culminates in a situation where surgical care may be available but inaccesible financially [6]. Moreover, the sheer size of the mass and difficulties voiding with its accompanying complications of dribbling, skin ulceration and movement difficulties, impact psychologically on patients with GISH. Consequently, these patients avoid other people and health facilities. These factors, in isolation or in combination, decrease further their productivity and ability to secure any meaningful work and result in a decreased quality of life [2,16]. In the case of the index case, he benefitted from a surgical outreach that catered for the costs of mesh and surgery was catered for by the patient's insurance.

Regarding a pre-op diagnosis, in more resourced settings, barium enema, ultrasonography, abdominal computed tomography scans and magnetic resonance imaging were used as standard pre-op investigations [4,11-14] Even though available, an abdominal x-ray or barium enema was not considered because the patient did not present with strangulation or intestinal obstruction, which will have necessitated these as in other instances [10]. This not withstanding, it may be helpful to perform imaging, like barium enema or abdominal computer tomogram prior to surgery where debaulking is anticipated even when there is no strangulation, to determine structures in the hernia to reduce operating time and complications. The skin incision of choice depends on the reducibility or otherwise of GISH and the expertise of the surgeon. The para-inguinal skin crease incision chosen aided access to the sac for dissection as close as possible to the internal ring and provided a better cosmetic post-op scar. Other authors who reported GISH used different skin incisions for different reasons including allowing for more access in recurrent cases, finding the need for scrotal repaire and anticipating the possibility of returning abdominal content to the scrotum in the event of increased intra-abdominal pressure [10,12]. These were all not deemed necessary or not encountered in this case.

The Lichtstinstein mesh technique used in this case similar to other case reports [19,20]. This allowed for a tension-free repair after return of intra-abdominal content. This method of repair is even

more justified in GISH because mesh reduces the tension on the wound after repair. This is because of the anticipated increased intra-abdominal pressure and resultant stress on the wound expected after the return of content to the abdomen. Recurrence should then theoretically decrease although in GISH it is reported as low [7]. Unlike in other instances, [10] the ipsilateral testicle was not necrotic and it was not necessary to perform an orchidectomy. Also, the scrotum was not reconstructed because in similar instances, [19] it retracted satisfactorily. In the index case it retracted satisfactorily too.

Our patient was discharged home in a stable condition without any cardiorespiratory complications similar to other case reports [19,20]. It must be noted that cardiorespiratory challenges may occur post-op as reported in other instances [4,10,11,14,15]. because of the decreased venous return and decreased respiration accompanying a compartment syndrome even in instances where debaulking is done. It is the case that in most type 1 GISH [19,20] and some type 2 GISH [19], like in the index case, simple repair can be done even though the predictors of such outcome are poorly understood. All the same, patients with any type of GISH should be monitored at least 24 hours like in this case to detect and manage any complications should they arise. Further research into the determinants of and predictors of post-op abdominal compartment syndrome associated with GISH will help rural surgeons decide on which patients to operate or refer to higher centres for further care.

This case report showed that GISH may occur as a result of delay in reporting for surgical care and in some types of Type 2 GISH a simple mesh hernioplasty without the need for organ resection and scrotal reconstruction is possible in a primary care setting.

Conflict of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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