

Testicular Atrophy Following Inguinal Hernia Repairs: Are We Doing Enough in Prevention and Counseling?

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Abstract

Testicular atrophy is a rare complication of hernia repairs which often results in litigations. While early detection and treatment of ischemic orchitis obviate this grave complication, good communication and adequate counseling are known to minimize the associated litigations. Herein, we report two cases of testicular atrophy following herniorrhaphy. Both patients noticed scrotal pain and swelling within three days after the surgery and were given antibiotics and analgesia by the attending surgeons. They subsequently developed a gradual reduction in testicular volume after two months with severe atrophy of the affected testis. The objectives of this case series are to emphasize the need for immediate evaluation of genital symptoms such as scrotal pain, swelling, and redness after inguinal hernia repairs and the need to counsel patients for possible orchitis, atrophy, and testicular loss before any groin surgery.

Keywords: Complications of herniorrhaphy, inguinal hernia repairs, inguinal hernias, testicular atrophy

INTRODUCTION

Although hernia repair is a frequently performed surgical procedure, it is not without complications. Overall, complications after hernia repairs range from 1.7% to 8%.^[1,2]

Testicular atrophy is an established and challenging complication of inguinal hernia repairs that surgeons may face despite their expertise.^[3] With an incidence of 0.3%–0.5%, testicular atrophy is a rare complication in primary hernia repair.^[4,5] This incidence, however, increases to 5% in repeat procedures.^[4] A study by Uzzo *et al.*^[6] showed no difference in the incidence of testicular atrophy between the Lichtenstein and Shouldice techniques of hernia repair. Testicular atrophy is due to surgical injury to the intricate pampiniform plexus of veins or interference with the collateral arterial supply to the testis during aggressive dissection of a distal hernia sac.^[4,6] It is the outcome of outright irreversible damage to the testicular vessels, unrecognized or poorly managed ischemic orchitis.^[3,4] This complication, though rare, accounts for a reasonable proportion of the causes of litigations from inguinal hernia surgeries.^[7]

In this case series, testicular atrophy from unrecognized testicular ischemia following inguinal hernia repairs is discussed and the importance of early detection and prevention

as well as the place of counseling before, during, and after the surgical procedure is emphasized.

CASE REPORTS

Herein, we present two cases of testicular atrophy following inguinal hernia repairs. Both complained of symptoms suggestive of ischemic orchitis early, but the diagnosis was missed, resulting in testicular atrophy. In addition, none was counseled for ischemic orchitis or testicular atrophy as a possible complication before the procedure.

Case 1

Mr. OU was a 37-year-old man who presented to our clinic in quest of a possible solution to his empty right hemiscrotum. He had herniorrhaphy in a private health facility some five years previously on account of a right inguinal hernia and was subsequently discharged the following day. Two days after the

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How to cite this article: Ogbetere FE, Imoisili U. Testicular atrophy following inguinal hernia repairs: Are we doing enough in prevention and counseling? Niger J Med 2021;30:105-7.

Submitted: 07-Sep-2020

Revised: 29-Sep-2020

Accepted: 04-Dec-2020

Published: 15-Feb-2021

Access this article online

Quick Response Code:



Website:
www.njmonline.org

DOI:
10.4103/NJM.NJM_170_20

procedure, he developed swelling and pain on the ipsilateral hemiscrotum necessitating his re-presentation to the attending surgeon. He was given analgesics and antibiotics and reassured. The symptoms abated following the above medications. He, however, noticed a gradual reduction in the affected testis about two months after the groin surgery. This progressively worsened until the testis became nonpalpable. His fertility was unaffected because he had two children after the procedure.

Examination revealed a healed right groin scar. The right hemiscrotum was empty with no testicular mass felt [Figure 1]. The left testis was essentially normal in size, consistency, and lie. Other examination findings were unremarkable. A scrotal scan done showed absent testicular tissue on the right hemiscrotum and a left testicular volume of 18.42 ml. A counsel for testicular prosthesis was, however, not well received by the patient due to lack of finance.

Case 2

Mr. OA was a 57-year-old man who had inguinal hernia repair three years previously in a general hospital. He developed undue scrotal pain and swelling two days after the surgery. He was, however, reassured by the attending surgeon and discharged on the 3rd day with some antibiotics and analgesics. He had complete resolution of symptoms after one week. Two months later, he noticed a gradual reduction in the size of his right testis. It progressively reduced in size till he could only feel a tiny hard “seed” in the right hemiscrotum. He presented to us on the prompting of the wife for a possible testicular implant placement.

He had a healed groin scar [Figure 2]. The right hemiscrotum was contracted with a shrunken, hard ovoid testicular mass slightly bigger than a bean seed. The left hemiscrotum and testis were normal. Scrotal scan revealed a right testicular volume of 2.16 ml and a left testicular volume of 17.23 ml. He is presently being worked up for possible placement of testicular prosthesis.

DISCUSSION

Testicular ischemia and atrophy are rare complications of groin surgeries. In a series of 6361 hernia cases reported by Ein

et al.,^[5] testicular atrophy was found in 0.3% and increases to about 5% with recurrent hernia surgeries.^[3] This complication is considered to be due to an acute injury to the pampiniform venous plexus as well as injury to the collateral arterial blood supply to the testis.^[4,5]

Ischemic orchitis characteristically presents 2–3 days after inguinal hernia surgery and can progress to testicular infarction and atrophy in the absence of urgent intervention. Typically, the affected patients present with scrotal pain and swelling with occasional redness and differential warmth on the ipsilateral side of the hernia repair.

The diagnosis of testicular ischemia is clinically established and confirmed by ultrasound or duplex scan of the acute scrotum when there is no detectable flow within the testicular parenchyma.^[1,3] The two patients presented here complained of testicular pain and swelling within the two days following surgery, one was while still on admission. They were, however, reassured and sent home on analgesics and antibiotics, and no thorough clinical examination or investigation was carried out to unravel the cause of the scrotal complaints. A detailed examination with a high index of suspicion of this rare complication would have probably given the testes a chance of survival.

Early decision to re-explore the groin following a thorough physical examination and imaging is necessary once ischemic orchitis is diagnosed. Surgical methods vary depending on the viability of the testis. Vascular compression due to haematoma should be relieved by evacuation of the haematoma, while compression due to ligature is relieved by release of ligature. Subsequently, testicular viability should be assessed. In addition, mesh should be removed when there is spermatic cord mesh compression or inflammatory reactions from the mesh prosthesis.^[1,3,4,7] Orchiectomy may be unavoidable in the event of late ischemia with non-viable testis. When no intervention is offered, as in these patients, progressive atrophy of the testis ensues [Figures 1 and 2].

Testicular atrophy from inguinal hernia repairs are both depressing and discomfiting and could be a source of litigation. The major



Figure 1: An empty right hemiscrotum 5 years after right herniorrhaphy



Figure 2: A shrunken empty right hemiscrotum with a herniorrhaphy scar

causes of litigation include issues with the consent process, delay in recognition of complications, and problems with postoperative care.^[6] Studies have revealed that the quality of consent for groin surgeries can be greatly inconsistent and weighty complications such as visceral injury and testicular atrophy are commonly not talked about and this can be seen among all categories of surgeons.^[8,9] However, good communication and necessary counseling before, during, and after the surgery have been noted to mitigate the attendant litigations.^[10] These index patients were not told of the uncommon risk of testicular atrophy and loss as complications of inguinal hernia surgery. While minimizing the occurrence of this complication by leaving in place all indirect hernia sacs and limiting dissection to the pubic tubercle, a standardized groin surgery-specific informed consent form could help to reduce these issues.

CONCLUSION

Patients who complain of scrotal swelling, pain, and redness within a few days of inguinal hernia repair should be promptly evaluated and treated to prevent possible ischemic orchitis and testicular atrophy. Furthermore, in view of the gravity of this complication, we recommend a candid counseling on the possibility of orchitis, atrophy, or testicular loss in patients undergoing groin surgeries for medicolegal reasons.

Informed consent

We declare that we have obtained appropriate patients' consents.

Declaration of patient consent

The authors certify that they have obtained appropriate patients' forms. In the form, the patients have given their

consents for their images and other clinical information to be reported in the journal. The patients understand that their names will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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