Non-traumatic hernia of the lateral abdominal wall in a patient infected with the human immunodeficiency virus

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ABSTRACT

INTRODUCTION There are several classifications for abdominal hernias, and a non-traumatic lateral wall hernia (LAWH) is a rare type. We report the first case of a patient with LAWH infected with the human immunodeficiency virus (HIV).

CASE HISTORY A 53-year-old HIV-infected male presented with an abdominal mass. The patient had a history of treatment with combination antiretroviral therapy. A LAWH was diagnosed based on physical examination and findings of computed tomography. Open mesh repair was undertaken successfully. The patient had no evidence of a recurrent hernia during 11 months of followup.

CONCLUSIONS High intra-abdominal pressure and weak connective tissue can lead to LAWHs. Antiretroviral therapy and lipodystrophy can cause LAWHs in HIV-infected patients.

KEYWORDS

Non-traumatic lateral wall hernia – Human immunodeficiency virus – Combination antiretroviral therapy

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A non-incisional lateral abdominal wall hernia (LAWH) is not common. We report a case involving a patient with a LAWH infected with the human immunodeficiency virus (HIV).

Case History

A 53-year-old male with HIV infection sought evaluation in our department for a right lateral abdominal mass of 4-month duration. There was no history of trauma, surgery, or inflammation involving the abdominal wall. The patient had a 20-year history of hypertension and a 10-year history of diabetes mellitus (DM). He had been treated with combination antiretroviral therapy (ART; lamivudine, efavirenz, lopinavir, ritonavir) for 2 years.

The mass occupied the right lateral abdominal wall and had a diameter of 12cm × 12cm (Fig 1) but was not palpable in the left lateral decubitus position. The patient had no discomfort or pain. Routine laboratory tests were normal. Computed tomography (CT) revealed thinning of the right internal and external oblique muscles of the abdomen compared with contralateral muscles (Fig 2). Therefore, a right lateral abdominal hernia was diagnosed.

Immunity and healing ability would decrease with the development of HIV infection, so surgery was carried out. Intraoperatively, the internal and external oblique muscles of the abdomen did not confirm CT findings. Weakness in the abdominal wall resulted in the mass. Defective edges of internal and external oblique muscles were identified (≈12cm × 12cm) and a soft mesh (15cm × 15cm; Bard, Louisville, KY, USA) applied and fixed to the transversus abdominis muscles (Fig 3). Then, the internal and external oblique muscles were sutured in an interrupted fashion to the aponeurosis of the rectus abdominis muscle. The LAWH had resolved by postoperative day-9. No recurrence was noted during 11 months of follow-up. The patient recovered without complications.

Discussion

Abdominal hernias are common findings in general-surgery practices. There are several classifications for abdominal hernias: non-traumatic LAWH, congenital lateral abdominal defect, and traumatic LAWH.¹ The LAWH described here was an unusual type of hernia. Castillo-Sang and colleagues¹ reported the first case of a LAWH in a 56-year-old

Figure 1 Bulge on the right lateral abdomen

Figure 3 Soft mesh sutured on the transversus abdominis muscle

Figure 2 CT showing the hernia defect involving the internal oblique muscle (weakness is marked by an arrow)

male in 2008. Kim and colleagues² reported a LAWH in a 68-year-old male in 2015. Our report is the third to report a LAWH. However, it is the first report of a LAWH in a HIV-infected patient.

There are two reasons that account for hernia formation in the abdominal wall: high intra-abdominal pressure and weak connective tissue.³

Aging, coughing, weight changes, sit-ups, familial weakness of abdominal muscles and chronic/intermittent abdominal distension can result in high intra-abdominal pressure.^{4,5} In addition, long-term use of corticosteroids and cigarette smoking can weaken the abdominal wall.²

Sundström and colleagues³ conducted a study involving 1,072 HIV-infected patients. They showed that HIV-infected

patients who used ART had a high incidence of abdominal-wall hernias. Age and DM are also risk factors for abdominal-wall hernias. The metabolic syndrome (which includes DM and hypercholesterolaemia) may be related to the formation of midline hernias.

In HIV-infected patients, lipodystrophy can lead to accumulation of intra-abdominal fat, resulting in mechanical disruption of the abdominal wall and appearance of a hernia.⁵

Our patient was infected with the HIV and was treated with ART. Sundström and colleagues³ reported that midline hernias are related to the abnormal distribution of fat, but they did not diagnose a LAWH. There are few descriptions of LAWHs. In our patient, lipodystrophy may have been involved in the herniation. Moreover, our patient had a history of DM, which may have also contributed to herniation.

Patients described previously^{1,2} underwent laparoscopic repair of hernias with an intraperitoneal onlay mesh; we chose open mesh repair. Scarcity of reports involving LAWHs meant that our choice of surgical procedure could not be compared with those of other scholars. Long-term observation should also be considered. The patient will continue to be followed up. Similar cases involving HIV-infected and non-HIV-infected patients will be documented.

Conclusion

A non-traumatic LAWH is a rare type of hernia. High intra-abdominal pressure and weakened connective tissue can lead to LAWHs. The HIV-infected patient reported here may have developed LAWH secondary to ART and/or lipodystrophy. There are two surgical approaches for LAWH repair, open mesh repair and laparoscopic hernia repair, both of which are good choices.

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