Hernia through an Iliac Crest Bone Graft Site: A Case Report

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Use of autologous bone grafts is common in orthopedic reconstruction. The most common source for autologous bone graft is the iliac crest. This procedure, however, may be associated with considerable morbidity. We reported a case of lumbar incisional hernia following prior anterior iliac crest bone harvesting in a female patient who had undergone bilateral total hip arthroplasty 2 years ago. She was hospitalized for acute pain in abdomen with vomiting and constipation, found to have herniation of left colon with incarceration through the abdominal wall defect above the iliac crest. She underwent successful mesh hernia repair. Despite its rarity, these hernias should be included within the differential diagnosis of flank masses.

Keywords: Autogenous bone harvesting, Bone graft, Colon herniation, Iliac crest

INTRODUCTION

Bone grafting is a common procedure performed in orthopedics. The most common source for autologous bone graft is the iliac crest. It may be harvested from the anterior or the posterior iliac crest.¹ This procedure may be associated with a number of minor and major complications. Herniation through an iliac crest defect is a very rare but major complication of this procedure. Here, we report a case of lumbar incisional hernia following prior anterior iliac crest bone harvesting. This disease is unique for its anatomic specialty and for its rarity, since most surgeons do not have exposure to such a problem. Surgery is recommended secondary to the 25% risk of incarceration and 10% risk of strangulation with lumbar hernias.²

CASE REPORT

A 54-year-old woman presented with pain in abdomen associated with vomiting and constipation. Physical examinations revealed a large bulging mass under the left iliac crest scar. The patient had undergone bone grafting at the time of total hip replacement 2 years ago. The bone grafts were harvested from the left iliac crest. On examination, there was evidence of large bowel herniation lateral to the left iliac crest. Hernia was difficult to reduce causing incarceration with signs of intestinal obstruction. A computed tomography (CT) scan of the pelvis confirmed the bone defect and large bowel herniation through the left iliac crest defect (Figure 1).

The patient underwent surgical intervention where open prolene meshplasty was performed. The sac was dissected up to the neck and opened. The contents were descending and sigmoid colon with its mesentery. The contents were reduced and a herniotomy performed (Figure 2).

The edges of defect were clearly delineated and a polypropylene mesh was placed and was fixed to the surrounding muscles with 2-0 prolene. The overlying muscle sheet which was lying detached from the iliac crest was undermined superiorly and approximated to the iliac crest. Postoperative recovery was uneventful with excellent wound healing.

DISCUSSION

In 1945, Oldfield first described hernia through iliac crest bone defect.³ It is a very rare condition. In a series of 414 cases, it was seen in two patients (0.5%),⁴ whereas an incidence of 5 and 9% has been reported by other authors.⁵ They are more common in females, with onset of symptoms ranging from 24 days to 15 years after bone harvest.⁶ Our patient noticed symptoms 2 years postoperatively.
Patient presented with soft tissue swelling and pain. The contents of such incisional hernias can vary from loops of small intestine to the cecum and ascending or descending colon as seen in the case presented. Liver herniation has also been reported. Therefore, great care and precision needs to be taken while handling the sac and its contents. Signs of bowel obstruction may be present if hernial contents are incarcerated or strangulation.

Plain radiograph shows the bone defect and sometimes intestinal loops outside the wing of the ileum. The definitive diagnosis can be done with an abdominal CT scan that shows the hernia and its contents. CT scan is done early before surgery to make rapid diagnosis and to avoid complications of this hernia-like strangulation and bowel necrosis.

Various methods have been described to repair such lumbar incisional hernias, including bone transfer and various soft tissue flaps. The Bosworth repair describes transferring the anterior superior iliac spine inferiorly and posteriorly, drawing muscle and fascia over the defect. The Koontz technique involves a lumbar fascia flap for repair. Laparoscopic approach has also been described in the literature. However, where the cecum and ascending colon being content of sac this could prove to be dangerous as dissecting the contents could inevitably lead to damage to the colon. Open approach therefore continues to be the safest for such hernias. A wide mesh repair is a procedure of choice. Care needs to be taken that the mesh extends for at least 1 inch beyond the defect under the overlying adjacent muscles all around the circumference. The use of suture bone anchors or corkscrew anchors to fix the mesh has been described. The mesh can also be secured to overlying muscle and the periosteum with 2-0 prolene as done in the case presented. A negative suction drain is placed over the mesh in order to prevent the development of a seroma.

CONCLUSION

Despite its rarity, these hernias should be included within the differential diagnosis of flank masses in patient who underwent bone graft surgery.

REFERENCES