CASE REPORT OPEN ACCESS

Unique presentation with trimodal transfer of a patient with traumatic bilateral anterior (obturator) hip dislocation

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ABSTRACT

Introduction: Bilateral anterior hip dislocation presenting late with complete recovery with no complication is unusually rare. Case Report: A 39-year-old manual labor presented with bilateral anterior hip dislocation with non-specific neurology following an industrial accident 20 hours post injury. Closed manual reduction required femoral block, spinal and general anaesthesia with three surgeons engaging a maneuver not previously described. Subsequently, skin traction was applied for two weeks and was discharged with non-weight bearing advice for another four weeks. Patient on his regular clinic follow up was subjected to various modalities of physiotherapy in view of his job nature requiring early return to work. Regular follow-up of three years did not reveal any evidence of avascular necrosis of the femoral heads and he obtained full function of both his hip joints. Conclusion: The mode of trasport which results in the delay in seeking treatment.

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INTRODUCTION

Bilateral traumatic anterior hip dislocations caused by industrial accident is rare. Its rarity is evident with only eleven cases reported in English literature [1]. Here we report a case of traumatic bilateral anterior hip dislocation; its presentation delay, mechanism of injury, mode of patient transfer to hospital and the modified reduction technique. We also reviewed literature on the various modality of treatment advocated for this unusual presentation.

CASE REPORT

A 39-year-old manual labor at a construction site from a rural area with poor transportation infrastructure, first presented to our emergency room 20 hours post injury to both his hips. He was in a squatted position at the time of injury. A brick impacting machine lost control and compressed him from the front and back, fulcruming his perineum against the hard ground. He fell forward with both his hips in full flexion, wide abduction and external rotation. He was in prone position for about 20 minutes

before getting help to lie in supine position. He was not able to move his hips and being in an awkward position, he was carried by his colleagues where one of them supported the torso by holding under his armpits and two others held his back and pelvis with their bare hands. The fourth colleague supported both the lower limbs to prevent them from too much movement. He was shifted onto the back of a 4-wheel drive which took them to a riverside where a boat was waiting for them. As there were no available splints, his colleagues used tree branches to anchor him to the boat. He was in the same position for another 45 minutes of the boat ride which took him to a helicopter landing site. Upon arrival to the site, he was again carried by his colleagues in the same manner to a helicopter waiting to transport him to a general hospital. With the help of a trained paramedic, the patient was then secured in the passenger bay of the helicopter using several safety harnesses. The paramedic also administered intravenous Pethidine to calm the patient during the air transfer. In short, a trimodal mode of transport was used in transferring the patient to definitive care.

Though he was spared of other major organ injuries, his complaints were severe pain, deformity and inability to move both his hips. Examination revealed both his hips were in wide abduction, flexion and external rotation. Passive movement of his hips was nearly impossible. There was patchy neurology in both the lower limbs. The myotome or dermatome could not be specified to either solely L1, L2, etc. as the patient had a mixture of all the dermatomes in a patchy manner. Nevertheless, post reduction, there was no neurology.

No foot drop was noted as the patient had a multimodal transfer in which an anticipation of foot drop was expected. We assumed that since non-trained individuals helped with the transfer, there could be a possibility of his leg undergoing traction at some point of the transfer. Fortunately, the femoral nerve was not affected in patient. There were superficial facial injuries and he was hemodynamically stable. Appropriate analgesics were administered to counter his severe pain prior to the radiographs. Radiographic studies revealed bilateral anterior hip dislocations into the obturator foramen (Figure 1).

Close reduction using 75 mg Pethidine and 7.5 mg Midazolam as sedation was unsuccessful. In the operating room, initially, bilateral femoral block was attempted with great difficulty by the anaesthetist in view of the awkward positioning of the patient. Though successful, it was inadequate to counter the muscle spasm but it was sufficient to position the patient for spinal anesthesia. In spite of successful spinal anesthesia, it was difficult for both surgeons and patient to co-operate with the external close maneuvers. Though the anaesthetist prefered the regional block but due to poor responce of the patient, general anaesthesia was finally given. The general anaesthetic was conducive for the surgeons to perform the maneuvers as the patient was fully relaxed. Unlike individual hip posterior dislocation, where counter-traction to the anterior iliac crest and hip flexion to 90 degrees, slight abduction while pulling in line with the femur would suffice to reduce the dislocation, this type of dislocation did not respond to the usual method.

Figure 1: Bilateral Anterior Hip Dislocation into Obturator Foramen

In this patient, we first placed a sandbag over the sacrum in line with the spine to obtain sag of both the gluteal muscles. Then, we engaged one surgeon for pelvic stabilization by traction-counter-traction over the anterior iliac crest and perineum. Two other surgeons simultaneously applied axial traction to each leg with internal rotation and application of pressure to the medial side of the proximal thigh bringing the femoral head towards the acetabulum and adduction. Both the hips reduced simultaneously. Post reduction telescoping proved its stability upon reduction. Post reduction radiographs showed the hips were correctly positioned and did not reveal any fractures. No CT or MRI was done post reduction as the centre was not equipped with one at that time. We were dependent on the radiographs and the clinical outcome. There were no foot drops.

Subsequently, skin traction was applied for two weeks in the ward. Wheel chair mobilization was commenced with regular ultrasound heat therapy and static quadriceps and calf exercises. He was discharged from the ward with non-weight bearing advice for another four weeks. On follow-up at one month, we were rather surprised to see him fully weight bear without any pain and having full range of movement over his hip joints. The patchy neurology fully recovered. He was back to full manual labor the following week. Six monthly follow-up for three years with radiographs did not reveal any evidence of avascular necrosis of both femoral heads and patient was pain free.

DISCUSSION

Hip dislocations are becoming more common due to increased high velocity road traffic accidents. Posterior hip dislocations are more common. Anterior hip

dislocations are being reported to occur in only 10–11% of the total hip dislocations. Bilateral, simultaneous anterior hip dislocations are even rarer and a number of cases have been reported by different authors. The most common cause in most of the cases reported has been road traffic accident. In our case, it was an industrial accident and the mechanism of injury that made this case unique. Nevertheless, all the authors highlighted on the position of the hips at the time of impact being in extreme abduction and flexion [1, 2].

Patients with bilateral anterior dislocation usually present with flexed, externally rotated leg and abducted hips. Radiographs are usually diagnostic but in case of doubt, CT scan will definitely reveal the type of dislocation. Anterior hip dislocation can be classified as obturator, perineum and pubic. The direction of the hip dislocation depends on the position of the hip at the time of impact [3, 4].

Most authors used the Allis's maneuvers to achieve reduction i.e., patient in supine position, knee flexed, pelvis stabilized, lateral traction force to inside of thigh, longitudinal traction is applied in line with axis of femur, and hip in slightly flexed position. The essential feature is traction in line of deformity, followed by gentle flexion of hip to 90 degrees. The hip is gently rotated internally and externally with continued longitudinal traction until reduction is achieved. These maneuvers are ideally done under general anaesthesia. In our case, three modalities of anesthesia were used to get the ideal relaxation of the muscles in spasm. This technique was used after fully understanding the various forces acting onto the hip joints at the time of injury. Patient's compliance to post reduction therapy and urgency to return to active work also contributed to defying the golden rule for Avascular Necrosis (AVN) [5–7].

The bilateral anterior hip dislocations in this case were a rare and significant injury. The outcome of the treatment was encouraging. Although we realize that the usefulness of data based on a single case is limited, we are encouraged by the outcome in this case and believe that the technique used is a viable option in bilateral anterior hip dislocation.

CONCLUSION

The time taken in seeking immediate treatment for bilateral antrerior hip dislocation is essential for good outcome. Although there was a significant delay in seeking treatment in this patient due to the logistic mode of transfer,the patient was lucky to have a complete recovery. It is essential to improve the prehospital care aspect especially in the rural areas.

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Author Contributions

Rishya Manikam – Conception of design, Acquisation of data, Analysis and interpretation of data, Drafting the article, Critical revision of the article, Final approval of the version to be published
CS Kumar – Conception of design, Acquisation of data, Analysis and interpretation of data, Drafting the article, Critical revision of the article, Final approval of the version to be published
Kunalan G – Conception of design, Acquisation of data, Analysis and interpretation of data, Drafting the article, Critical revision of the article, Final approval of the version to be published
A B Sri Latha – Conception of design, Acquisation of data, Analysis and interpretation of data, Drafting the article, Critical revision of the article, Final approval of the version to be published
Nasir Mohamad – Conception of design, Acquisation of data, Analysis and interpretation of data, Drafting the article, Critical revision of the article, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

REFERENCES

1. Anna Domingo, Josep M. Segur, Lazaro Saz, Sebastian Garcia-Ramiro. Unusual traumatic anterior bilateral hip dislocation. J Orthop Surg Traumatol 2008;18:475–8.
2. R. Tezcan, R. Erginer, M. Babacan. Bilateral Traumatic Anterior Dislocation Of The Hip: Brief Report. J Bone Joint Surg(Br) 1988;70-B:148–9
3. T S Sethi, M K Mam, R K Kakroo. Bilateral Traumatic anterior dislocation of the hip. The Journal of Trauma 06/1987;27(5):573–4.
4. N Terahata, H Matsui, N Makiyama. Bilateral anterior dislocations of the hips. International Orthopaedics 02/1996;20(2):125–6.
5. A L Akinyoola, A A Abiodun. Bilateral traumatic anterior hip dislocation–a case report. West African journal of medicine. 24(3)272–3.
6. Zamani MH et al. Bilateral traumatic anterior dislocation of hip: case report. Clin Orthop 1981;161:203–6.
7. Gibbs A. Bilateral obturator dislocation of the hip joint. Injury 1981;12:250–1.