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Dr. Abhijit Chandge
Department of Orthopedics,
Dr. Hedgewar Hospital,
Aurangabad, Maharashtra,
India

Dr. Amit Patil
Department of Plastic
Surgery, Dr. Hedgewar
Hospital, Aurangabad,
Maharashtra, India

Dr. Amit Pilkhane
Department of Paediatrics,
Dr. Hedgewar Hospital,
Aurangabad, Maharashtra,
India

Brachial artery injury with humerus fracture caused by pig bite: A case report

Dr. Abhijit Chandge, Dr. Amit Patil and Dr. Amit Pilkhane

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Abstract

Animal bite causing vascular injury is not uncommon. We present a rare case of brachial artery injury with humerus fracture in a five year old child, injury caused by domestic pig bite. Early surgical intervention is key to success in such cases. A five year old boy presented with brachial artery injury with humerus fracture following domestic pig bite. Immediate surgical intervention in form of open reduction and internal fixation of humerus fracture and brachial artery thrombectomy with repair saved his upper extremity.

Keywords: brachial artery injury, humerus fracture

Introduction

Domestic animal bites causing vascular injury are not uncommon, even in India such injuries are caused by camel, dog and pig. Most of the time the injuries are either soft tissue injury or vascular injury but vascular injury with fracture of bone is rare.

Case Report

We present a rare case of brachial artery thrombosis with humerus fracture on right arm following pig bite. Five year old male child with history of domestic pig bite at home presented in our casualty department with complaint of pain and swelling in right arm with puncture wound over medial aspect of upper third arm. On examination there was swelling over proximal third of arm with tenderness over same region. There was a puncture wound about 1\1 cm over medial aspect of upper third arm. Distal radial and ulnar pulse was absent. Brachial pulsation in cubital fossa was absent. Nerve functions were intact. Right extremity was slightly cold compared with left extremity. Color doppler study was done immediately which showed complete absent flow below upper third of brachial artery. Plain radiograph of the arm showed displaced fracture of upper third of right humerus.

The patient was immediately shifted to operation theatre for humerus fracture stabilization and vascular intervention. Incision was taken on medial aspect of right arm over puncture wound site along course of brachial artery. The brachial artery was exposed—the artery was thrombosed. Primarily humerus fracture was fixed with 3.5 recon plates. After stabilization of fracture humerus, thromboembolism was performed and the artery repaired primarily. Immediately after repair distal brachial, radial and ulnar pulsation was present.

After vascular repair prophylactic fasciotomy was done in arm, forearm and hand to prevent compartment syndrome. Postoperatively patient was given arm support and intravenous antibiotic started. Antirabies vaccine was given as per pediatrician advice.

Wound inspection was done on third postoperative day and was found to be healthy. Dressing of fasciotomy incision was done at same time. Fasciotomy wound was closed on 7th postop day once oedema was completely subsided. Sutures were removed at 14th postoperative day and gentle shoulder, elbow and wrist movements were started. Child obtained full movements at shoulder, elbow, forearm and wrist at 7th postoperative week with no signs of infection.

Corresponding Author:
Dr. Abhijit Chandge
Department of Orthopedics,
Dr. Hedgewar Hospital,
Aurangabad, Maharashtra,
India



Fig 1: picture showing puncture wound over medial aspect of upper third forearm



Fig 2: preoperative radiograph of arm ap and lateral view showing upper third humerus fracture



Fig 3: Intraoperative Photograph Showing Humerus Fracture Fixed with plate and brachial artery thrombus



Fig 4: Photograph after Thrombectomy & Brachial Artery Repair



Fig 5: photograph showing fasciotomy incision over forearm

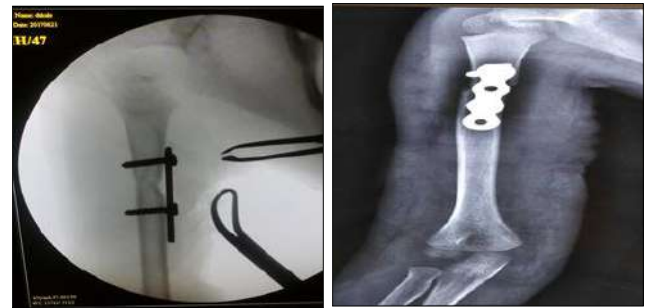


Fig 6: intraoperative c arm image after humerus fracture fixation



Fig 7: clinical photograph of patient showing healed wound after suture removal

Discussion

In India domestic animals, causing vascular injury are dog, camel and pig. Vascular injury to arm occurs due to direct animal bite. Pig has sharp teeth which directly penetrate into deep tissue and vascular structure. Fracture may occur either due to direct crushing or secondary to fall after bite. Diagnosis relies mostly on the presence of hard or soft signs of artery injury. Hard signs are active hemorrhage, absent distal pulse or ischemia, expanding or pulsatile hematoma and bruit or thrill. These require immediate surgical exploration. Soft signs are reduced or unequal pulses, large nonexpanding hematoma, orthopedic injuries carrying a high suspicion of vascular injury, peripheral neural deficit and history of bleeding.

This is first report of brachial artery injury with humerus fracture following pig bite. Immediate surgical intervention with fracture fixation and vascular repair gives excellent outcome as illustrated in this case. Prevention of such type of injury involves keeping child away from domestic animals at home.

Conclusion

This case report highlights the rare combination of brachial artery injury with humerus fracture due to pig bite emphasizing the importance of early surgical intervention to get successful outcome.

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