Case Report

Humerus fracture in the setting of primary pustular adult varicella infection in a young female

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ABSTRACT

Varicella or chickenpox is an infection caused by Varicella -Zoster virus, which is transmitted mainly by respiratory secretions through aerosol route. It is common in children but less so in adulthood, however, with more severe clinical course in the later. The disease is characterized by characteristic widespread exanthematous skin lesions that are chiefly vesicular but may turn into pustular form in certain cases. Vesicles and pustules not only pose a problem in surgical management of fractures but also increase risk of secondary infections in peri-operative period. We report a case posing management challenges of humerus fracture owing to the presence of concomitant pustular varicella infection.

Keywords: *Chickenpox, fracture fixation, humeral fractures, virus diseases*

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Introduction

Chickenpox in adults has its shares of complications. Associated skeletal injuries in the settings of widespread skin lesions that are pustular and with high risk of secondary skin infection are a challenge to treat. A right timing heralded by scabbing of the lesion and meticulous surgical techniques are key to satisfactory outcome.

Case Report

We present the case of a 21-year-old otherwise healthy young girl who presented with fractured humerus due to slipping over a cliff while walking uphill. As per the history of injury, the fall was triggered by weakness and malaise following a bout of fever three days ago. After the episode of fever, which relieved on taking some home remedy herbal syrup, she noticed wide spread multiple rashes on her skin notably in the areas like chest, back, upper extremities, axilla and abdomen [Figure 1]. The vesicles were pruritic with characteristic of chickenpox in appearance and there was history of a contact, a three-year-old child in the neighborhood whom she takes care. There was history of tenderness and abnormal mobility of left arm following trauma. She was taken to a local baba (soothsayer) for the traditional jhaar–phoonk (ritualistic cleansing). There she underwent five days of certain ritualistic practice and a make-do splint made of wooden sticks was applied to her left arm. She developed pustular form of the vesicles seven days later with another bout of fever and intense itching. The itching and pain was more severe in the left injured arm under the tight wooden-stick splintage. She was then taken to a primary health cente before coming to our institution, further delaying the arrival by a day. After clinical examination and radiological evaluation, a provisional diagnosis of simple fracture shaft humerus diaphysis in middle third region in the setting of a pustular varicella was made[Figure 2].

There was no history of chickenpox in the childhood or any history of vaccination for the same. She was given an arm pouch bag along with symptomatic and supportive therapy and admitted in an isolation ward. The skin lesion over the arm and forearm precluded application of plaster of Paris splintage. After a week, her skin lesions showed scab formation and her clinical complaint of pyrexia and pruritis gradually reduced in severity. After medical consultation about the minimal potential infectivity of the patient, a decision about the open reduction and internal fixation was taken in view of the fracture management. Thankfully the incision site as per the anterior approach to the humerus had no skin lesion to interfere with the incision [Figure 3]. The surgical anatomical fixation of the humerus fracture was accomplished

with the help of dynamic compression plate and screw constructas per the standard technique. Intraoperative image intensifier was used to confirm the length, alignment and rotation element well-taken care of [Figure 4]. A protective plaster of Paris splint was applied postoperatively.

Results

The incision site healed uneventfully and so was the fracture as reviewed at three, sixand 12 weeks, and then four months followup. There was no complaint or complication related to surgery or varicella infection at the one-year followup. There are a few faint stigmata of the skin lesions at certain places andthe patient is performing activities of daily living without any functional limitations. She is pain-free and happy, more so after knowing that now she won't face that problem again as she is immune to the disease for life.

Discussion

The adult varicella infection has more prevalent in tropical countries with population density and climate factors cited as contributing factors. Usually benign course of the infection does not pose any problem.[1] Adults may experience more severe clinical course and complications.[2] There are incidences of high fatality rate among adult patients and those with immune-compromised status.[3] Varicella pneumonia is a leading cause of morbidity and mortality in adult cases of chickenpox.[4] The common complications include pneumonia, secondary skin infections and neurological complications to name a few.[5] However, the complication arising of skeletal injury following malaise associated with the disease and its management in the settings of skin lesions is unreported so far.

Conclusion

This case report underlines occurrence of an unusual associated problem posing challenges in the treatment of fracture due to its varied presentation. This also highlights the role of prevalent social and cultural perceptions compounding the benign problem with either delay or inadequate and unscientific treatment causing high morbidity and in certain cases fatality. A patient approach for the right timing to

Figure 1: Widespread skin lesions and injured left arm

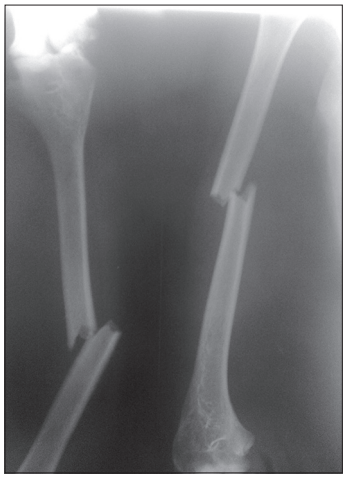

Figure 2: Radiograph showing fracture

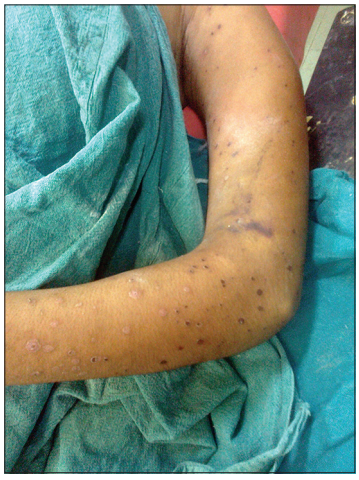

Figure 3: Relatively lesion - free incision area

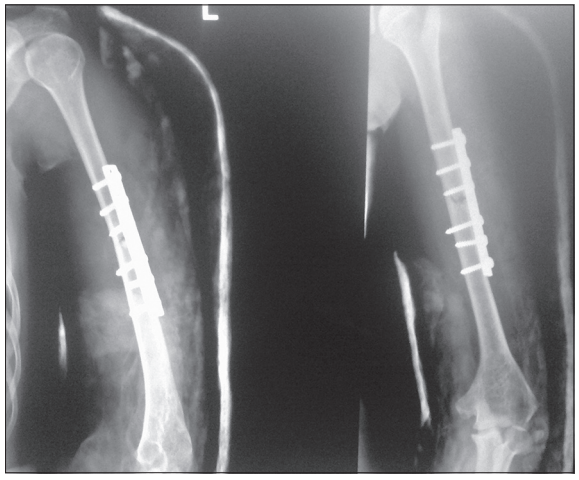

Figure 4: Post operative radiograph

intervene with open reduction and internal fixation of the fracture guarantees uneventful surgery and satisfactory outcome.

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