Case Report

Dengue fever associated with acute scrotal oedema: two case reports

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Abstract

Scrotal oedema associated with dengue fever is a rare and self limiting condition resolving in a few days without any complication or sequelae. This is a report of two cases of dengue fever associated with acute scrotal and penile oedema.

Keywords: Dengue fever, AISE, Acute scrotal oedema, Penile oedema, Peno-scrotal oedema.

Introduction

Dengue fever (DF) is endemic in Southeast Asia. It is caused by dengue virus belonging to family flaviviridae which is transmitted through bite of infected mosquito, Aedes aegypti.[1] DF may be complicated with dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS) with a variety of acute atypical presentations like encephalitis, meningitis, hepatitis, acalculous cholecystitis, appendicitis, pancreatitis, parotitis, myocarditis, adult respiratory distress syndrome, pleural effusion, ascites, and scrotal and penile oedema.[1-3]

Case-1:

An 18-years-old male presented with high grade fever associated with chills, body aches, skin rash, anorexia and peno-scrotal swelling for 4 days. On examination he was anaemic, with blood pressure 100/65 mmHg. Pulse 95 beats/minute, temperature 102°F and respiratory rate 25 breaths/min. The penis was moderately swollen, while the scrotum was slightly oedematous.

The laboratory findings were: hemoglobin 9.3 gm%,

haematocrit 50.5%, total leukocyte count (TLC) 4,000/µL, platelets count 70,000/mm^3, alanine aminotransferase (ALT) 64 U/L, aspartate aminotransferase (AST) 132 U/L, creatinine 1.5 mg/dl, albumin 4g/dl, bilirubin 1.2 mg/dl, prothrombin time (PT) 14 seconds and partial thromboplastin time (APTT) 47 seconds. His urine analysis revealed 25-30 RBCs in high power field, with no pus cells. The serological diagnosis of DF was made on day 5 by a positive immunochromatographic test (ICT) using dengue IgG/IgM rapid test (SD BIOLINE[4]). There was no pleural effusion (on chest radiography); ultrasound revealed scrotal and penile wall oedema. There was no ascites, hydrocoele or inguinal lymphadenopathy.

The patient was managed as an out-patient with symptomatic treatment consisting of paracetamol (for fever and pain), increased oral fluids and soft diet. Antibiotics and any non-steroidal anti-inflammatory drugs were avoided. Omeprazole, 40 mg once daily, was given as prophylaxis for gastrointestinal bleeding. Bleeding manifestations including gastrointestinal bleeding (from gastritis and peptic ulceration) are potentially serious complications of dengue haemorrhagic fever and omeprazole is helpful by inhibiting gastric acid inhibition.[5,6] The patient improved on conservative treatment and peno-scrotal oedema completely subsided on the 7th day.

Case-2:

A 5-years-old male presented with high grade fever associated with chills, headache, skin rashes, scrotal swelling for 3 days. On examination he was anaemic, with blood pressure 90/60 mmHg, pulse 110 beats/minute, temperature 104°F and respiratory rate 32 breaths/min. He had also developed marked scrotal oedema.

The laboratory findings were: haemoglobin 10.5 gm%, haematocrit 42.7%, TLC 5,200/µL, platelets count 90,000/mm^3, ALT 75 U/L, AST 162 U/L, creatinine 0.9 mg/dl, albumin 4.2 g/dl, bilirubin 1.1 mg/dl, PT 15 sec and APTT 42 sec. His urine analysis was normal. The serological diagnosis of DF was made on day 5 by a positive ICT using dengue IgG/IgM rapid test. There was bilateral pleural effusion (on chest radiography), moderate ascites (on ultrasound abdomen) and scrotal oedema (on scrotal ultrasound).

The patient was managed as an in-patient with symptomatic treatment consisting of nothing per oral, paracetamol suppositories (for fever and pain), and intravenous fluids. The patient did not require any transfusion of blood or platelets and improved on conservative treatment. Pleural effusion, ascites and scrotal oedema subsided by day 6.

Discussion

Acute idiopathic scrotal oedema (AISE) is a self-limiting acute scrotal wall oedema and erythema that resolves without sequelae. It was first reported by Qvist in 1956.[7-9] The oedema can also extend to the perineum, abdomen or penis.[10] It typically affects prepubertal boys between 5-11 years, and is the fourth most common cause of acute scrotum in patients aged below 20 years, following epididymitis, testicular torsion, and torsion of appendages.[9-11] It is very rate in adults (only 6 previous case reports); out of which three patients had diabetic foot, while the other three had AISE with involvement of the proximal penis.[3,11]

It is essential to determine whether the acute scrotal and/or penile oedema is painful or painless. Painful oedema is a potential surgical emergency and requires urgent care and evaluation to rule out testicular torsion and priapism. Other causes includes venereal oedema, epididymitis, orchitis, incarcerated hernia and hematocele.[11] Painless causes of acute scrotal oedema include filariasis, hydrocoele, hernia, Henoch-Schonlein purpura, Kawasaki's syndrome, allergic contact dermatitis, pancreatitis, complications from peritoneal dialysis and idiopathic.[11-14] Association of acute scrotal oedema with dengue fever is rare (only one previous case report).[3] It is characterized by high grade fever, myalgia, petechial haemorrhage, bleeding from gums, painless peno-scrotal oedema, low platelets and no associated urinary complains.

Differentiating acute scrotal oedema (ASE) from a scrotal surgical emergency is essential in order to avoid unnecessary exploration.[10] Diagnosis is mainly clinical, but may also be facilitated by ultrasonography (US). This allows the direct visualization of anatomical features and can be used to exclude other causes of acute scrotum.[8,9] In (AISE) vital signs, urinalysis, urine, tissue culture and white blood cell count are normal. Characteristic US findings in (AISE) includes oedema of the scrotal wall with hypervascularity compressibility and enlargement of the inguinal lymph noes with hypervascularity.[8,9] Marked oedema is confined to the skin and dartos fascia. The deeper layers and all internal structures are completely normal.[9] We also found scrotal wall oedema as in (AISE), but did not detect any lymphadenopathy on US. No testicular abnormality was detected in both patients via grayscale US or color Doppler imaging.

Although the etiology of AISE remains unclear, it is considered a variant of angioneurotic oedema.[9] The etiology of ASE in DF was an inflammatory response triggered by inflammatory mediators reacting to dengue viral antigen.[3] Sequence of inflammatory response consist of antibodies dependent enhancement, enhance replication of dengue virus, release of TNF, IL-4 and interferon. This in turn activates endothelial monocyte and T-cells causing disruption of coagulation system and vascular leakage; resulting in pleural effusion, ascites and oedema which can be localized or generalized.[3]

Treatment AISE is conservative consisting of scrotal elevation and support, reassurance and empirical use of antibiotics and antihistamines.[11] ASE associated with DF also subsides completely with supportive care.[3] The patient was also kept on conservative treatment consisting of antipyretic drugs, fluid replacement and scrotal support. Within 5 days the oedema resolved completely.

Conclusion

Acute scrotal and/or penile oedema associated with dengue fever is a rare but self limiting complication which subsides by conservative treatment.

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