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## Double trouble in dengue

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## ABSTRACT

Dengue is the commonest arboviral illness in the tropics and subtropics with most infections remaining mild. Bleeding complications are uncommon. Rare bleeding problems that have been reported include hematoma in the spleen, tongue and central nervous system. We report a lady with a gluteal hematoma and a gluteal abscess each, following dengue fever, thrombocytopenia, coagulopathy and intramuscular injections.

*Keywords:*

Dengue hematoma

Complications

Gluteal hematoma

### 1. Introduction

Dengue virus is a single stranded RNA virus belonging to Flaviviridae and has 4 serotypes (DEN 1 to 4)[1]. Common manifestations of dengue fever are similar to a host of other viral illnesses in the tropics and subtropics[1]. Rare manifestations of dengue include involvement of the lymphoreticular system (splenic rupture and lymph node infarction), respiratory system [acute respiratory distress syndrome (ARDS) and pulmonary hemorrhage], heart (myocarditis, conduction defects and pericarditis), liver and gastrointestinal tract (fulminant hepatic failure, pancreatitis, cholecystitis and diarrhea)[1]. Bleeding is most common in the skin and gastrointestinal system[2]. We describe never before reported complications of both gluteal hematoma and gluteal abscess due to dengue hemorrhagic fever and three intramuscular injections.

### 2. Case report

This 39 year old lady came with complaints of fever, headache, retroorbital pain and generalized myalgia of 5 days' duration and one day of passing black stools. For these complaints, she had received one intramuscular injection on either buttock on day 1 of fever and another intramuscular injection on the left buttock on the second

day. She had been referred on 5th day for thrombocytopenia (20000/cu.mm and dengue NS1 positivity). At admission she was afebrile, and had platynychia, right gluteal ecchymosis and hematoma (Figure 1a). She was hemodynamically stable with otherwise normal systemic examination. Investigations done at admission are shown in Table 1. Electrolytes, renal functions were normal; ultrasonogram revealed gall bladder wall edema, free fluid abdomen and bilateral pleural effusion. Dengue IgM was positive, while scrub IgM, leptospira IgM, malarial antigen and smear were negative. Due to hematoma and melena she was given vitamin K, three platelet concentrates, and two units fresh frozen plasma after which there was no further episodes. On the fifth day of admission she had complained of left buttock pain and was found to have induration and redness (Figure 1B) without fever. Amoxicillin-clavulanic acid and anti-inflammatory were initiated with no symptomatic relief. Due to falling hemoglobin (Table 1), albeit without symptoms, abdominal computed tomography was performed to rule out rare intrabdominal bleeding and assess the gluteal abscess. A thick walled abscess (Figure 1C) was seen, and 20 mL of thick fluid was aspirated (Figure 1D). She refused consent for incision and drainage. Pus culture was sterile. Reticulocyte count was 1.5%; ANA, HIV, HBsAg and AntiHCV performed for thrombocytopenia were negative. Her platelets normalized by 15th day of her illness. Ceftriaxone and metronidazole were administered with which patient rapidly improved. She was discharged on day 11 to complete antibiotic course of 10 days and on follow-up her symptoms had subsided completely.

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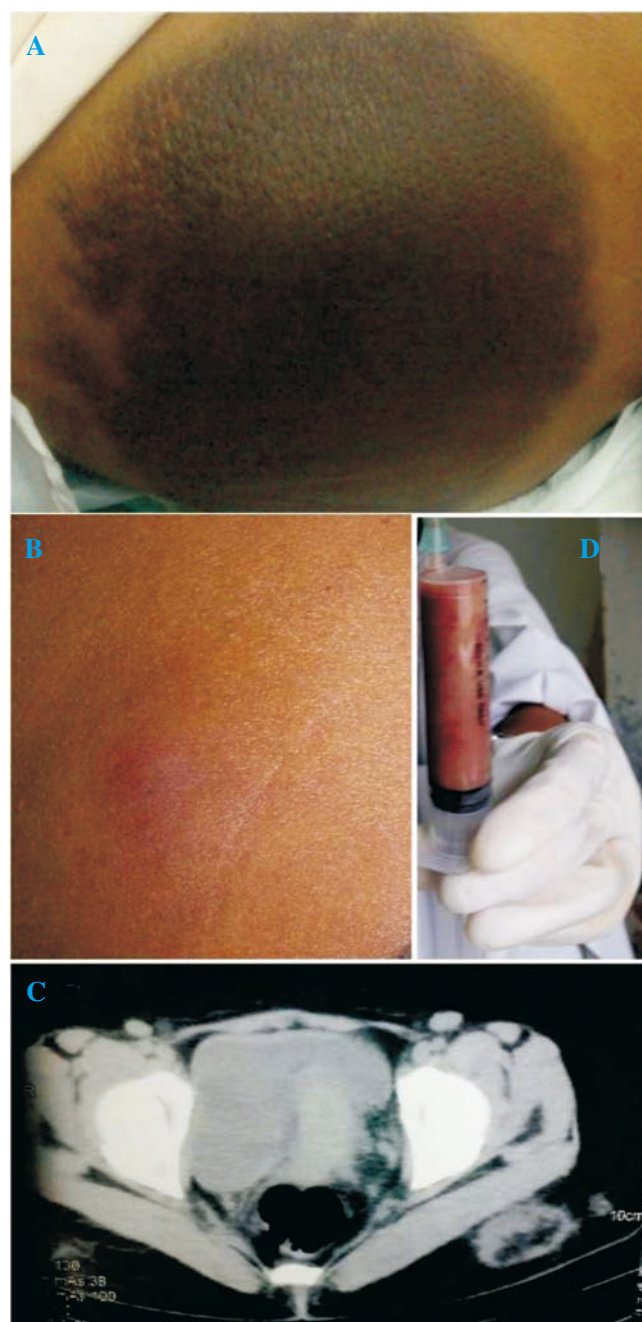
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**Table 1**

Investigations during her hospital stay from day 1 to day 10.

Parameters (units)	1	2	3	4	5	7	8	9	10
Hemoglobin (12–14 g/dL)	14.6	13.2	12.0	10.5	8.2	7.7	–	8.4	–
PCV (37–45 %)	43.8	37.6	30.2	24.1	23.3	28.5	–	28.5	–
Platelet (150–450 × 10 <sup>9</sup> /L)	7.0	23.0	15.0	20.0	25.0	44.0	70.0	130.0	180.0
Counts (4.5–9.5 × 10 <sup>9</sup> /L)	5.5	–	–	–	9.8	–	–	–	–
SGOT (0.17–0.68 μ kat/L)	13.3	–	–	25.6	–	11.6	7.7	2.7	1.3
SGPT (0.17–0.51 μ kat/L)	12.6	–	–	9.2	–	7.3	6.1	4.6	3.0
ALP (0.5–2.0 μ kat/L)	4.84	–	–	5.61	–	–	–	–	2.33
Albumin (3.5–5 g/dL)	2.1	–	–	–	–	–	2.8	–	–
PT (Seconds)	8.0	2.5	1.5	2.0	–	–	–	–	–
aPTT (Seconds)	70.0	42.4	31.2	22.8	2.4	–	–	–	–

PCV–packed cell volume; SGOT–serum glutamic oxaloacetic transaminase; SGPT–serum glutamic pyruvic transaminase; PT –prothrombin time prolongation; aPTT– activated partial thromboplastin time prolongation.



**Figure 1.** (A) Large hematoma in the right gluteal region; (B) Induration of skin over left gluteal region; (C) CT abdomen showing left gluteal abscess and right sided resolving hematoma (D) Pus aspirated from gluteal abscess

### 3. Discussion

Musculoskeletal manifestations are rare in dengue and are either due to myositis or rhabdomyolysis<sup>[1]</sup>. Spontaneous hematoma due to dengue has been reported in the spleen, nervous system and the tongue<sup>[2–5]</sup> and has been variously ascribed to thrombocytopenia and consumption coagulopathy. In our patient, intramuscular injections and associated thrombocytopenia, prolonged prothrombin time (PT) and activated partial thromboplastin time (aPTT) resulted in two different complications– a hematoma which resolved spontaneously and an abscess without pain, swelling or ecchymosis. Five cases of splenic hematoma and/or hemoperitoneum have been reported– one of them died due to secondary sepsis<sup>[6]</sup>; another was treated conservatively<sup>[7]</sup> while the rest required surgical intervention<sup>[3,6]</sup>. Patients with splenic hematoma present with abdominal pain, pallor and hypotension. An autopsy study of dengue cases revealed splenic hematoma in 15% of cases<sup>[3]</sup>.

In the nervous system, subdural, extradural, epidural and cerebellar hematomas have been reported in children with dengue<sup>[4–5,8]</sup>, that have resulted in seizures, encephalopathy, limb weakness, delirium and psychosis. The lingual hematoma due to dengue caused airway obstruction but tracheostomy was deferred due to thrombocytopenia and the patient improved with conservative therapy. Our patient's alkaline phosphatase was elevated at admission– associated co-infections with scrub typhus and leptospirosis were ruled out. It is possible that she had an evolving abscess at admission that became symptomatic on the tenth day of illness. Her hemoglobin also progressively decreased without symptoms during her hospital stay, probably because of her hemoconcentration reducing to her premonitory levels.

In conclusion, hematoma and abscess formation in the musculoskeletal system may occur in dengue independent of each other and is contributed by thrombocytopenia, coagulopathy and intramuscular injections. Platelet and plasma transfusion and antibiotics with or without drainage are necessary. Health practitioners must be cautious in administering intramuscular injections during the seasons where fevers with thrombocytopenia are a distinct possibility in a given patient.

### Conflict of interest statement

We declare that we have no conflict of interest.

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