

Case Report

An Unusual Case of Dengue Haemorrhagic Fever Complicated with Scrotal Haematoma:

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Abstract

Dengue is an important arboviral disease with a spectrum ranging from asymptomatic disease to fatal haemorrhagic fever and shock syndrome. Bleeding is a well-known complication that may range from skin petechiae to fatal hemorrhages. We report a rare case of spontaneous scrotal haematoma in a 14-year-old boy with dengue haemorrhagic fever.

Key words: Dengue fever, Hemorrhage, Uncommon complication, Scrotal haematoma, Sri Lanka

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Introduction

Dengue has posed a major socioeconomic and public health burden on national as well as international grounds. It is currently regarded the most important arboviral infection worldwide as half the global population lives in areas at risk of the disease and approximately 50% of this live in dengue endemic countries (1)(2). The previous estimated annual global incidence of 50-100 million infections per year has shown a dramatic rise in recent studies. Currently it is estimated at 390 million dengue infections per year (3). Of the total one hundred and twelve outbreaks recorded from 2010 to 2015 worldwide, the largest number was observed in Southeast Asia (4). Last year, Sri Lanka faced the heaviest dengue epidemic and the average number of cases showed a 4.3-fold alarming rise compared to the average numbers from 2012 to 2016 (5). This highly prevalent infectious disease has numerous complications and bleeding is a well-known complication with detrimental effects in severe dengue infection. We report a rare case of scrotal haematoma in a patient with dengue haemorrhagic fever (DHF).

Case report

A 14-year-old previously healthy boy presented with fever, body aches and headache for three days during the dengue epidemic season in 2017. There was no known past history

of dengue infection. Examination was unremarkable apart from fever and mild dehydration. Dengue non-structural protein (NS) 1 test was positive. On admission the full blood count revealed a white cell count of $3.3 \times 10^9/L$ with haemoglobin of 15g/dL, haematocrit 44.7% and a platelet count of $153 \times 10^9/L$. He became fever free since the fourth day of the illness. On the fifth day of illness he entered the critical phase with the lowest platelet count being $14 \times 10^9/L$. He developed a right sided moderate pleural effusion, confirmed by ultrasound scan along with mild ascites and pericholecystic fluid. On the seventh day of the illness following the critical phase, he complained of acute onset painful swelling of the right scrotum over a few hours duration. The swelling was not associated with fever spikes or preceding trauma and there were no other bleeding manifestations. The right hemi scrotum was swollen and tender but there was no increased warmth or skin oedema. AST was 37 IU/L and ALT 19 IU/L. Activated partial thromboplastin time and international normalized ratio were within normal ranges. C reactive protein was 3.7 mg/dL (<10). The ultrasound scan of the scrotum revealed a right sided hydrocoele measuring 11 cubic centimeters in volume with floating echogenic material suggestive of clotted blood [figure 1]. Bilateral testes were normal in size, echogenicity and vascularity. As the swelling was non-progressive, he was managed

conservatively with scrotal support. The platelet count was in the rising and the oedema was non progressive, hence he was not treated with platelet transfusions. Oral Tranexamic acid and prophylactic antibiotics were started. With supportive treatment he made a complete clinical recovery and was discharged from the hospital and no further complications were encountered.



Figure 1. Right sided hydrocoele with floating echogenic material suggestive of clotted blood

Discussion

Dengue virus is a single stranded RNA virus that belongs to the Flaviviridae family under the genus Flavivirus. It has four closely related serotypes namely, DENV-1, DENV-2, DENV-3, and DENV-4. It is an arboviral infection transmitted through infected *Aedes* species mosquito. Infection with each serotype confers lifelong immunity to the specific serotype but cross immunity is only partial and temporary (2).

Dengue can manifest as a wide spectrum ranging from mild asymptomatic illness to severe and fatal disease including DHF and shock syndrome. Only 5% of all cases of dengue turn out to be haemorrhagic fever and shock syndrome (6).

Pathogenesis of bleeding in DHF is not yet properly understood. The suggested mechanism includes an enhanced immune response by the host. It is thought to be primarily mediated by skewed T cell cytokines which were initially primed by an asymptomatic primary infection by dengue virus. This results in severe disease and DHF in second infection with dengue virus. The resulting manifestations include an endothelial dysfunction and increased vascular permeability, thrombocytopenia and platelet dysfunction and disseminated intravascular coagulation (7)(8). Furthermore, in DHF, thrombin triggers the intrinsic pathway of the coagulation cascade

resulting in activation of coagulation factor XI. This activates factors IX and X resulting in further formation of thrombin. The inadequacy of factor XI, thrombin, thrombin-activatable fibrinolysis inhibitor feedback loop causes a homeostatic defect resulting in an imbalance between coagulation and fibrinolysis (9).

Bleeding in dengue can range from harmless petechial skin hemorrhages to life threatening gastrointestinal, genitourinary, pulmonary, muscle and cerebral hemorrhages (10).

In literature, retroperitoneal haematomas, rectus sheath haematomas, abdominal haematomas and spontaneous hemoperitoneum have previously been described with DHF (6)(7)(10)(11)(12)(13). However, spontaneous scrotal haematoma in DHF has not previously been reported.

Other scrotal manifestations of dengue are seldom reported in literature. A rare but self-limiting acute scrotal oedema with dengue is described in several cases (14) (15). The pathology is presumed to be due to inflammatory mediators against the dengue antigen. Acute epididymo-orchitis is another recognized complication (16).

A number of other conditions may cause bleeding into the scrotum. Scrotal haematomas due to haemorrhages involving the spermatic cord, varicoceles and adrenals have been reported in the literature (17)(18)(19). Furthermore Henoch-Schönlein syndrome, trauma and anticoagulant therapy have been associated with bleeding in the spermatic cord (20)(21). But in our patient there was no history of trauma or any of the above and ultrasonography ruled out varicocele.

Potential complications of scrotal haematoma include compressive damage affecting the viability of testes and infection. A rare scenario of massive spontaneous haematoma leading to haemorrhagic shock has been reported once (22).

Conclusion

Scrotal haematoma in DHF is a very rare manifestation which in this case was self-limiting, but potentially can lead to compressive complications that may irreversibly affect the viability of testes. Awareness and close monitoring for such rare complications is the cornerstone of prevention and appropriate timely management. To our knowledge this is the first case of DHF complicated with spontaneous scrotal haematoma.

References

- Gubler DJ. Dengue, Urbanization and Globalization: The Unholy Trinity of the 21(st) Century. *Trop Med Health* [Internet]. 2011 Dec [cited 2018 Sep 3];39(4 Suppl):3–11. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22500131>
- Wilder-Smith A, Murray MB, Quam M. Epidemiology of dengue: past, present and future prospects. *Clin Epidemiol* [Internet]. 2013 Aug [cited 2018 Sep 3];5:299. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23990732>
- Bhatt S, Gething PW, Brady OJ, Messina JP, Farlow AW, Moyes CL, et al. The global distribution and burden of dengue. *Nature* [Internet]. 2013 Apr 7 [cited 2018 Sep 3];496(7446):504–7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23563266>
- Guo C, Zhou Z, Wen Z, Liu Y, Zeng C, Xiao D, et al. Global Epidemiology of Dengue Outbreaks in 1990–2015: A Systematic Review and Meta-Analysis. *Front Cell Infect Microbiol* [Internet]. 2017 Jul 12 [cited 2018 Sep 3];7:317. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28748176>
- WHO | Dengue fever – Sri Lanka. WHO [Internet]. 2018 [cited 2018 Sep 3]; Available from: <http://www.who.int/csr/don/19-july-2017-dengue-sri-lanka/en/>
- Parmar NM, Patel MD, Negi SS, Savani CM, Desai NL, Patel AP. Spontaneous hemoperitoneum review article. Available from: <http://medind.nic.in/gaa/t15/i2/gaat15i2p19.pdf>
- Ameer A, Arachchi WK, Jayasingha P. Psoas haematoma complicating dengue haemorrhagic fever: a case report. *Gall Med J* [Internet]. 2009 Oct 8 [cited 2018 Sep 3];14(1):83. Available from: <https://gmj.sljol.info/article/10.4038/gmj.v14i1.1188/>
- Woodland DL, Winslow GM. Immunity to emerging pathogens. *Immunol Rev* [Internet]. 2008 Oct 1 [cited 2018 Sep 3];225(1):5–8. Available from: <http://doi.wiley.com/10.1111/j.1600-065X.2008.00695.x>
- Lee I-K, Liu J-W, Yang KD. Clinical and laboratory characteristics and risk factors for fatality in elderly patients with dengue hemorrhagic fever. *Am J Trop Med Hyg* [Internet]. 2008 Aug [cited 2018 Sep 3];79(2):149–53. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18689614>
- Kaur H, Girgila K. Rectus sheath haematoma complicating dengue haemorrhagic fever-a case report. *Int J Res Med Sci* Kaur H al *Int J Res Med Sci* [Internet]. 2017 [cited 2018 Sep 3];5(1):354–6. Available from: www.msjonline.org
- Singh J, Singh H, Sukhija G, Jagota R, Bala S. Retroperitoneal Haematoma in a Patient with Dengue Haemorrhagic Fever: A Rare Case Report. *J Clin Diagn Res* [Internet]. 2016 Nov [cited 2018 Sep 3];10(11):OD01-OD02. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28050423>
- Kumar A, Mondal S, Sethi P, Manchanda S, Biswas A, Wig N. Spontaneous iliopsoas haematoma in a patient with dengue haemorrhagic fever (DHF): A case report. *J Vector Borne Dis* [Internet]. 2017 [cited 2018 Sep 3];54(1):103–5. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28352053>
- Malaria Research Centre (India) KJ, Shovkat R, Samoon HJ. *Journal of vector borne diseases*. [Internet]. Vol. 52, *Journal of Vector Borne Diseases*. Malaria Research Centre (Indian Council of Medical Research); 2003 [cited 2018 Sep 3]. 339-341 p. Available from: <https://www.cabdirect.org/cabdirect/abstract/20163201068>
- Dengue fever associated with acute scrotal oedema: two case reports [Internet]. [cited 2018 Sep 3]. Available from: http://www.jpma.org.pk/full_article_text.php?article_id=2832
- Kumar KJ, Nataraj B, Anitha C, Santhoshkumar M. Dengue fever associated with acute scrotal oedema. *Sri Lanka J Child Heal* [Internet]. 2015 Sep 12 [cited 2018 Sep 3];44(3):176. Available from: <https://sljch.sljol.info/article/10.4038/sljch.v44i3.8021/>
- Abdulla M, Alungal J, Nagabhushan K, Narayan R. Dengue fever presenting as epididymo-orchitis. *Indian J Heal Sci* [Internet]. 2016 [cited 2018 Sep 3];9(3):322. Available from: <http://www.ijournalhs.org/text.asp?2016/9/3/322/196337>
- PRIME PubMed | Spontaneous idiopathic hematoma of the spermatic cord: a report of 2 case [Internet]. [cited 2018 Sep 3]. Available from: https://www.unboundmedicine.com/medline/citation/7463571/Spontaneous_idiopathic_hematoma_of_the_spermatic_cord_a_report_of_2_cases_
- Aliabadi H, Cass AS. Nontraumatic rupture of varicocele. *Urology* [Internet]. 1987 Apr [cited 2018 Sep 3];29(4):421–2. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/3564216>
- Gonçalves R, Abuabara A, Abuabara RFF, Feron CA. Scrotal hematoma as a sign of adrenal hemorrhage in newborns. *Sao Paulo Med J* [Internet]. 2011 Mar [cited 2018 Sep 3];129(2):113–5. Available from:

- http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1516-31802011000200011&lng=en&tlng=en
20. Crosse JE, Soderdahl DW, Schamber DT. "Acute scrotum" in Henoch-Schönlein syndrome. *Urology* [Internet]. 1976 Jan [cited 2018 Sep 3];7(1):66–7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/1246772>
 21. Handmaker H, Mehn WH. Hemorrhage into spermatic cord and testicle simulating incarcerated inguinal hernia. An unusual complication of anticoagulation therapy. *IMJ Ill Med J* [Internet]. 1969 Jun [cited 2018 Sep 3];135(6):697–9. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/4182068>
 22. Burnand K, Viswanath S, Kumar V, Chitale S. Acute spontaneous scrotal haematoma presenting with haemorrhagic shock: a case report. *Ann R Coll Surg Engl* [Internet]. 2012 Jan [cited 2018 Sep 3];94(1):e1-2. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22524901>