INTRODUCTION

Dengue fever is a mosquito borne viral illness transmitted by Aedes aegypti and caused by any one of five strains of dengue virus from Flaviviridae family. Disease manifestation is highly variable from asymptomatic to life threatening dengue hemorrhagic fever. There is a dramatic increase in the number of dengue cases recently and for that reason, rare presentations are increasingly seen due to rising burden of disease. Different atypical presentations, associated with dengue fever, has been reported earlier, but subacute thyroiditis and conjunctivitis, caused by dengue virus, are extremely rare. We present a case of 32-year old patient who presented with conjunctivitis and subacute thyroiditis and was found to have dengue viral infection as the cause of these conditions.

CASE REPORT

A 32-year man with no significant medical history presented with eye redness, itching, foreign body sensation, watery discharge, photophobia, and mild fever. He denied any sore throat, cough, shortness of breath or neck rigidity. Slit lamp examination revealed hyperemia, chemosis, subconjunctival hemorrhage and follicular reaction. Eyelids were mildly edematous and swollen but no corneal defect was appreciated. Fundoscopy showed normal optic disc and retina. The patient was treated symptomatically with topical antihistamines. Two days later, patient started having severe neck pain and swelling. Patient also complained of high fever, myalgia, arthralgia, palpitations and mild dysphagia. In the meantime, his eye itching did improve but redness and watery discharge worsened. History was positive for recent sick contact with brother who was being treated for dengue fever. On repeat examination, temperature was 38.3°C and heart rate was 120 bpm. Thyroid was symmetrically enlarged with diffuse tenderness, no nodules or irregularity were appreciated. He also had tremors but rest of physical examinations were normal.

All baseline investigations and thyroid function tests were ordered. Complete blood count revealed low platelet count of 75000/mcL, hemoglobin of 14 g/dl and WBC count of 3500 cells/mcL. On the basis of fever, thrombocytopenia and recent sick contact, probable diagnosis of dengue fever was made and dengue serological test was ordered. IgM dengue antibodies were positive and IgG antibodies were negative. Thyroid profile showed low TSH (0.05 mIU/L) and high free T4 (10.0 ng/dl). ESR was 43 mm and serum thyroglobulin level was also markedly high. Radioactive iodine uptake test revealed low uptake of radioactive iodine (< 1%) at 24 hours, thus confirming diagnosis of subacute thyroiditis. As subacute thyroiditis followed dengue fever, dengue virus was considered the most likely cause of subacute thyroiditis. Because of the worsening eye symptoms, samples were taken from both eyes and sent for culture, gram stain and PCR. To our surprise, test for dengue by PCR was positive for dengue serotype 2 (DEN-2).

Patient was treated with propranolol and ibuprofen. Oral steroids were also given for 1 week, which significantly improved pain and swelling. Topical antihistamines were
used for viral conjunctivitis. Patient eye symptoms improved in 3 - 4 days. Repeat thyroid testing was done 6 weeks later, which showed normal TSH and free T4. Patient did not have any hemorrhagic manifestations during the course of treatment.

**DISCUSSION**

Dengue fever is a mosquito borne viral illness and is most prevalent in tropics affecting Southeast Asia and Latin America.¹ There are five different serotypes of dengue virus and recovery from infection of any serotype makes patient immune to that particular strain for life. However, cross immunity is usually partial and temporary. Around 80% of individuals who contract illness remain asymptomatic and life threatening conditions like dengue shock syndrome and dengue hemorrhagic fever affect only 5% of infected people.³,⁴ Classic dengue fever is characterized by fever (usually biphasic), headache, joint pains and rash.⁵ Rarely, dengue virus can affect several other organs which include central nervous system (Transverse myelitis, GB syndrome), heart (myocarditis), and liver (acute liver injury).⁶ Ophthalmic and thyroid involvement is rarely reported as manifestations of dengue infection.

Viral conjunctivitis is most commonly caused by adenovirus and is associated with upper respiratory tract infection. Other common viruses that can cause it include varicella zoster and herpes simplex.⁷ Symptoms include eye itching, tearing, redness and rhinorrhea. Viral culture is used to diagnose epidemic viral conjunctivitis; but in most cases, diagnosis is clinical and treatment is symptomatic. In uncertain cases and severe symptoms, virus can be isolated with culture or PCR of specimens. Subacute thyroiditis, also most commonly caused by viruses, presents as discomfort in neck, painful and diffuse goiter. It is also associated with upper respiratory tract infections. Viruses that can cause subacute thyroiditis include adenovirus, mumps, measles and coxsackie viruses. However, dengue virus is rarely known to cause this disease.⁸ It can present as hyperthyroid, hypothyroid or euthyroid state; and in majority of cases, there is a complete recovery from altered thyroid state when disease subsides.

Our patient presented with symptoms of viral conjunctivitis and thyroiditis, but later developed classic symptoms of dengue fever. On investigation, dengue virus was the likely cause of viral conjunctivitis and subacute thyroiditis, thus revealing another atypical manifestation of dengue fever.

**CONCLUSION**

Dengue virus can affect many systems including cardiac, neurological, musculoskeletal, hematologic and gastrointestinal; but involvement of eyes and thyroid gland is rarely seen. A high degree of suspicion is required in patients who have eye or thyroid symptoms in addition to classical dengue fever. Our case report stresses the importance of recognizing atypical presentations of dengue fever, especially in an era when number of worldwide dengue fever cases are at its peak.

**REFERENCES**