Acute post-streptococcal glomerulonephritis (PSGN) is a classic example of acute nephritic syndrome in children. It is typically characterized by gross hematuria, edema, hypertension, and acute kidney injury (AKI). Patients show diverse clinical profiles from being asymptomatic to mild syndrome or significant complications such as AKI, cardiac failure, or encephalopathy. Hypertension is found in up to 90% of patients and only 10% may have neurological symptoms. Only a few present with posterior reversible encephalopathy syndrome (PRES). Although PRES is a rare, but severe complication, there is a good outcome with appropriate treatment. Here, we report a case of PSGN in an 11-year-old female child who presented with altered sensorium, seizures, and vision loss. She was diagnosed as PRES on neuroimaging, which recovered with appropriate treatment.

Key words: Glomerulonephritis, Posterior reversible encephalopathy syndrome, Vision loss
PRES has mainly been described in adults but has also been reported in children [3,5]. PRES in children has been shown to be associated with Henoch-Schönlein purpura, acute lymphoblastic leukemia, steroids, hemolytic uremic syndrome, intra-abdominal neurogenic tumors, porphyria, and bone marrow transplant [6,7]. In literature, PRES associated with PSGN has also been reported [8,9].

Although the underlying pathophysiology of PRES remains elusive, various theories have been proposed, namely, hypertension-induced breakdown in cerebral autoregulation; cerebrovascular endothelial dysfunction; and vasoconstriction and hypoperfusion with subsequent ischemia and vasogenic edema [10]. The preferential involvement of the posterior brain in PRES may be caused by its relative paucity of sympathetic innervation in comparison to the anterior circulation.

The diagnosis of PRES is mainly based on neuroimaging findings along with clinical features. Bartynski described three types of patterns on MRI brain. Almost 95% patients showed vasogenic edema with 75% patients in the parieto-occipital regions. Sometimes infarction (10–25%) or an intracranial bleed (15%) can be found on imaging [11,12]. In the present case, the child had encephalopathy, status epilepticus, and vision loss with classical MRI brain findings. An important feature of PRES is the reversibility of imaging abnormalities, which was seen in our case with the MRI brain after 6 months of being normal.

Although the association between PSGN and PRES has been reported [8,9,13], acute glomerulonephritis presenting with symptoms of PRES is extremely rare in children [2,14]. A total of 5–10% of children had PRES who were admitted to hospital with acute nephritic syndrome with various causes, but an exact association with PSGN was not known.

In our case, transient cortical blindness is described, which is one of the manifestations of PRES. Overall 33% patients with PRES had visual disturbances. Gupta et al. reported that PSGN with PRES presented with hypertension, transient vision loss with computed tomography of brain findings, which was reversed after hypertension control [13]. Kaarthigeyan and Vijayalakshmi reported a case with typical PSGN features and transient blindness [15].

CONCLUSION

PSGN can present atypically as PRES, which is a rare and severe entity. MRI brain is necessary. By early recognition and appropriate treatment, neurological sequelae and possible death can be prevented. Pediatricians should be aware of this unusual severe neurological complication, as early recognition may improve prognosis.

REFERENCES