International Journal of Contemporary Pediatrics
Mundkur SC et al. Int J Contemp Pediatr. 2023 Jul;10(7):1137-1139
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: https://dx.doi.org/10.18203/2349-3291.ijcp20231857

Case Report

Interesting case of acute pancreatitis secondary to leptospirosis

Suneel C. Mundkur*, Niharika Reddy, Karen Janice Moras, Divya Mary George, Rochelle Anne Pereira

Department of Pediatrics, Kasturba Medical College, Manipal, Karnataka, India

Received: 08 May 2023
Revised: 08 June 2023
Accepted: 15 June 2023

***Correspondence:**
Suneel C. Mundkur,
E-mail: Suneel_cm@hotmail.com

ABSTRACT

Leptospirosis caused by *Leptospira icterohemorrhagica* is a severe, acute condition which can be complicated by multi-organ dysfunction renal failure, liver failure (jaundice), acute respiratory distress syndrome, rhabdomyolysis and bleeding manifestations such as petechiae, epistaxis, hematemesis, hemoptysis, malena, commonly we see characteristic conjunctival suffusion and may lead to fatal multiple organ dysfunction. Leptospirosis may be mistaken for diverse infectious diseases such as malaria, dengue fever, rickettsial disease, ehrlichiosis or hantavirus infection which may mimic leptospirosis. We reported an interesting and rare case of leptospirosis with acute pancreatitis who had a prolonged course.

Keywords: Leptospirosis, Acute pancreatitis, Multi-organ, Infectious

INTRODUCTION

Leptospirosis is a zoonotic disease caused by more than 250 serovars of Leptospira species, a spirochete spread worldwide but mainly found in tropical areas.[1,2] It is the most common zoonosis in the world is usually transmitted by urine of rodents and dogs with an incubation period of 7-14 days.[3]

This infectious condition has a wide spectrum of symptoms such as headache, muscle pain, fever and chills and severe symptoms like pulmonary hemorrhage, and meningitis.

One such presentation of leptospirosis is Weil's disease which is considered a severe, acute form of the condition which presents with kidney failure, liver damage (jaundice) and bleeding manifestations such as petechiae, epistaxis, hematemesis, hemoptysis and even malena.[4] The characteristic feature is conjunctival suffusion. Leptospirosis is a febrile illness which can lead to multiple organ dysfunction with a high mortality.

CASE REPORT

We present an unusual case of leptospirosis presenting to the paediatric triage. A 16-year-old boy came with complaints of fever for 10 days, vomiting for 4 days following each meal associated with loose stools for 4 days and malena, epistaxis and bleeding from oral cavity bleeding episodes in the previous two days.

On examination, the child was drowsy, had tachypnea, tachycardia and low saturation on room air which improved to 95% with 6 l/min oxygen therapy. The BP recording was less than fifth centile. There was presence of bilateral conjunctival congestion, multiple areas of bleeding were noted in the oral cavity and fresh blood in the nose at the time of presentation. The respiratory system examination showed that there was decreased air entry on the right side with coarse crackles. There was a 6 cm

hepatomegaly palpable on abdomen examination. The patient was admitted in the paediatric intensive care unit and the child had reduced ejection fraction (37%) and collapsed IVC. Child improved with fluid resuscitation, inotropes, supportive treatment, and oxygen therapy. Baseline blood investigations done show severe thrombocytopenia (6000/µl), serum CRP was elevated (147.27) and had an acute kidney (eGFR=12.5, urea=210 mg/dl, creatinine=5.72 mg/dl). The ABG showed compensated metabolic acidosis and hence he was started on bicarbonate correction. Liver functions were deranged too (serum ALT=61.5 IU/l, ALP=104 IU/l, AST=154 IU/l, direct bilirubin=5.03 mg/dl, total bilirubin=5.43 mg/dl, APTT=46.1 sec, PT=16.8). The urine routine revealed gross hematuria. Fever workup was inconclusive for malaria, typhoid, dengue, and scrub. The serology for Leptospira was positive. She responded well to third generation cephalosporine (ceftriaxone) vancomycin and metrogyl for 10days. The USG abdomen showed heterogeneous echotexture of the pancreas. His Serum amylase and lipase levels were found to be elevated (amylase=301 U/l, lipase=479.2 U/l). Hence a diagnosis of acute pancreatitis due to leptospirosis was considered. The child received two cycles of hemodialysis for abnormal renal function test and the procedure was tolerated well. Child was also transfused with platelets and FFP.

There was improvement in renal and cardiac parameters. Oxygen was also gradually tapered and stopped. Pancreatic enzymes were persistently elevated (peak values were serum amylase=913 U/l, lipase=1663.4 U/l) for a prolonged period. Patient recovered well with conservative line of management and his liver, kidney and pancreatic functions were normal at 3 months follow up.

Prevention of leptospirosis is best done by keeping away from animals and areas that may be contaminated by their urine. People whose occupation, travel or hobbies involve risks should know of the disease and how to avoid it. The main groups at risk are dairy farmers and milkers; slaughter-house workers, meat inspectors, veterinarians and meat carriers in food industries; people who work habitually in wet occupations (rice farmers, sugar cane harvesters, drainers, sewer workers, miners); adventure travellers (cave exploration, white water rafting, water sports) and military or civil emergency personnel.[5]

DISCUSSION

It is usual, in leptospirosis, during recovery that the renal, liver and coagulation parameters recover together as the patient improves. But in the present case pancreatitis persisted and had a prolonged course to recovery. An immunological basis for pathogenesis of leptospirosis includes toll-like receptor 2 activation may play a vital role in the inflammatory phenomenon.[6] The most consistent pathologic finding in leptospirosis is vasculitis of capillaries manifested by endothelial oedema, necrosis and lymphocytic infiltration which occur as a result of decreased scavenging of oxygen free radicals, intracellular enzymes, and toxins. Small vessel vasculitis and ischemic injury leading to activation of proteolytic enzymes and auto-digestion is a possible mechanism.[7]

A two-centre observational study by Goswami et al reported a 5% incidence of AP among patients with leptospirosis, this shows the rarity of this condition.[8] A study done by Edwards et al published a 39 month clinical study of 88 patients with leptospirosis and detected hyperamylasemia values greater than three times normal in only 23% of these patients and only two patients from his study had abdominal pain and ultrasound examination suggestive of pancreatitis.[9] This shows that acute pancreatitis in Leptospirosis does not necessarily present with elevated amylase and abdominal pain. Moreover acute pancreatitis is associated with significant morbidity and mortality, resulting in the death of 20% of patients, therefore we need to keep a high index of suspicion when it comes to diagnosing this condition.[10]

CONCLUSION

Pancreatitis is seldom found in association with leptospirosis, may prolong the course of illness and may present during recovery. Hence high index of suspicion and prompt recognition & treatment is required to minimise the mortality and morbidity related to leptospirosis.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Panagopoulos P, Terzi I, Karanikas M, Galanopoulos N, Maltezos E. Myocarditis, pancreatitis, polyarthritis, mononeuritis multiplex and vasculitis with symmetrical peripheral gangrene of the lower extremities as a rare presentation of leptospirosis: a case report and review of the literature. J Med Case Rep. 2014;8:150.
2. Gomes PEAC, Brilhante SO, Carvalho RB, Sousa DR, Daher EF. Pancreatitis as a severe complication of leptospirosis with fatal outcome: a case report. Rev Inst Med Trop Sao Paulo. 2019;61:e63.
3. Maier A, Kaeser R, Thimme R, Boettler T. Acute pancreatitis and vasoplegic shock associated with leptospirosis - a case report and review of the literature. BMC Infect Dis. 2019;19(1):395.
4. Ching SR. "Leptospirosis". Wiki J Medicine. 2022;9(1):2.
5. Sambasiva RR, Naveen G, Agarwal SK. Leptospirosis in India and the rest of the world. Braz J Infect Dis. 2003;7(3):178-93.
6. Ranawaka N, Jeevagan V, Karunanayake P, Jayasinghe S. Pancreatitis and myocarditis followed by pulmonary hemorrhage, a rare presentation of leptospirosis- a case report and literature survey. BMC Infect Dis. 2013;13:38.

7. Herath NJ, Kamburapola CJ, Agampodi SB. Severe leptospirosis and pancreatitis; A case series from a leptospirosis outbreak in Anuradhapura district, Sri Lanka. BMC Infect Dis. 2016;16(1):644.
8. Goswami RP, Goswami RP, Basu A, Tripathi SK, Chakrabarti S, Chattopadhyay I. Predictors of mortality in leptospirosis: an observational study from two hospitals in Kolkata, eastern India. Trans R Soc Trop Med Hyg. 2014;108(12):791-6.
9. Edwards CN, Nicholson GD, Hassell TA, Everard CO, Callender J. Leptospirosis in Barbados. A clinical study. West Indian Med J. 1990;39(1):27-34.
10. Mazhar M, Kao JJ, Bolger DT. A 23-year-old Man with Leptospirosis and Acute Abdominal Pain. Hawaii J Med Public Health. 2016;75(10):291-4.

Cite this article as: Mundkur SC, Reddy N, Moras KJ, George DM, Pereira RA. Interesting case of acute pancreatitis secondary to leptospirosis. Int J Contemp Pediatr 2023;10:1137-9.