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Splenic abscess due to multi drug resistant Klebsiella pneumoniae in a post-renal transplant patient – Case Report

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Introduction: Splenic abscess is rare condition having incidence rate of 0.14-0.7 % in various autopsy series. Splenic abscess may develop due to contiguous spread of infection , direct trauma to the spleen or hematogenous spread of infection [1]. The first two modes are uncommon while the hematogenous spread of infection is more common and is commonly associated with bacterial endocarditis , urinary tract infection, intraabdominal infection etc. Common etiological agents are Streptococcus sp., Staphylococcus aureus, gram negative aerobic bacteria,fungus etc [2]. Most of the cases presents with fever, abdominal pain and splenomegaly. Immunosuppression is an important risk factor for splenic abscess. As this condition is frequently fatal in untreated patient, the index of clinical suspicion should be high. CT scan and USG of abdomen are sensitive diagnostic tools [3]. Standard therapy include splenectomy plus antibiotics [1&4].

We report a case of splenic abscess in post renal transplant patient caused by the hematogenous spread of multi drug resistant klebsiella pneumoniae.

Case Report : A 24 years old post renal transplant male patient was admitted to a tertiary care hospital with the complaints of fever for 7 days with pain abdomen and vomitting for 2 days. On routine examination the level of hemoglobin, white blood cells and platelets was low. On ultrasonography of abdomen, multiple small non-necrotic lesions in liver and native kidney were detected. Spleen was also enlarged with large abscess. NCCT abdomen was also done with same findings.

The urine sample was received in microbiology laboratory for bacterial culture and sensitivity. Klebsiella pneumoniae grew in significant number (> 105 cfu/ml) and was found to be sensitive only to colistin and tigecyclin. The same bacteria grew in both blood and ultrasonographic guided splenic aspirate with the same sensitivity pattern. The bacterial isolate and its antimicrobial sensitivity pattern was also confirmed by automated ID system Vitek 2. KOH mount and culture for fungus and wet mount for parasite were negative.

He was a known case of end stage renal disease and underwent autologous kidney transplantation four months back in the same centre. The patient was on immunosuppresant therapy (with Prednisolon, Mycophenolate mofetil and Tacrolimus) since then. After transplantation patient had developed diabetes for which he was on subcutaneous insulin. He was admitted before this episode also for fever with anemia, leucopenia and thrombocytopenia and was discharged after treatment in good general condition at that time. In the previous admission urinary tract infection was diagnosed with the isolation of multi drug resistant klebsiella pneumoniae in significant number which was sensitive only to colistine and tigecyclin. He was treated with Tigecyclin. He recovered and was discharged at that time.

This time the patient was started treatment with tigecyclin and was planned for splenectomy. But the infection was

so heavy and disseminated that he died before splenectomy was performed.

Discussion: Splenic abscess is a rare entity mostly reported in autopsy. Its rarety is further evidenced by the fact that in one series of 540 intra-abdominal abscesses, none were in the spleen [5&6]. Most common mode of spread of infection is hematogenous where the infective focus remains elsewhere in the body. Here in this case also the mode of infection seems to be hematogenous as the patient presented with UTI followed by septicemia. The same organism has been isolated from culture of urine as well as blood and then finally from splenic aspirate.

It is well known fact that splenic abscess occurs more frequently in immunocompromised cases and the same has been found in this case also as this post renal transplant patient developed diabetes after taking immunosuppressant medications.

Klebsiella pneumoniae was isolated from all the three samples and all these isolates were having the same antimicrobial sensitivity pattern confirming the hematogenous spread of infection. The strain was resistant to all the available antibiotics except colistin and tigecyclin. Multi drug resistant (MDR) strains most likely are acquired nosocomially.

Conclusion

- The sequence of isolation of the bacteria shows the spread of infection to be hematogenous from primary in urinary tract to spleen.
- Early diagnosis and timely intervention can result a better outcome. For this high index of clinical suspicion with radiological and microbiological proof is needed.
- As the patient had multiple admissions in the hospital, there is high probability of nosocomial acquisition of this multi drug resistant strain. So infection control policy should honestly be implemented.

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