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Pet Dog-Related Pantoea agglomerans peritonitis: A Rare Cause of peritoneal dialysis related Peritonitis

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Objectives : Peritonitis is a common complication in peritoneal dialysis patients. The causative agents vary from commonly encountered pathogens to more unique species. This manuscript reports a rare case of peritonitis caused by Pantoea agglomerans in a patient on peritoneal dialysis with a history of close contact with a pet dog. While a few cases of peritonitis related to pet animals have been reported in the literature, awareness and knowledge are limited. This article seeks to enhance our knowledge of this rare ailment and underscore the significance of recognizing risks related to pet ownership.
Methods : We conducted an analysis of data derived from diagnosing and treating patients in a clinical setting, supplemented by a comprehensive review of previously reported findings.
Results : A 76-year-old female, who was receiving peritoneal dialysis, presented with intense abdominal pain. Clinical examination revealed abdominal tenderness, rebound tenderness, and abdominal rigidity. The diagnosis of bacterial peritonitis was established based on the patient's symptoms and analysis of peritoneal fluid. The analysis confirmed the presence of P. agglomerans, an unusual culprit. Upon investigation, it was uncovered that the patient had close contact with a pet dog, suggesting a potential link between the infection and the dog.
Conclusions : This case highlights the crucial awareness that physicians need to have regarding the potential risk of peritonitis associated with pet dogs in patients undergoing peritoneal dialysis. To this end, it is recommended that a patient's medical history include inquiries about pet ownership and proximity to dogs. This approach would facilitate appropriate education and the implementation of preventive measures.

Table.jpg

Table 1. Summary of published cases of dog-related peritonitis in peritoneal dialysis

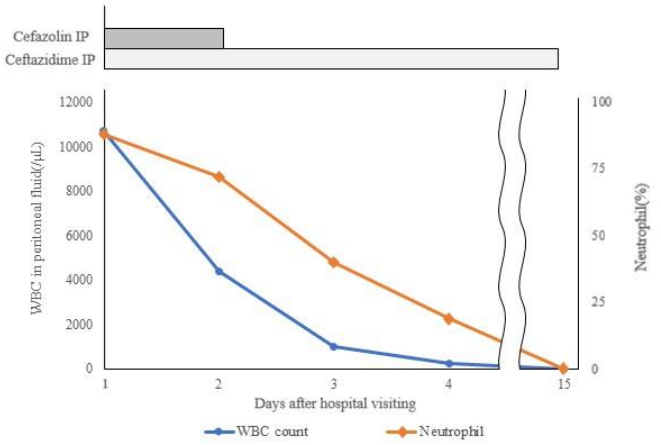
Case	Age/ Sex	ESKD cause	Dialysis vintage	Peritoneal culture organism	Dog exposure	Antibiotic used/route	Comments
2007[a]	48/F	Hypertension, Type 2 diabetes	NA	Pasteurella multocida	O	Genta and Cefa/ IP	Presumably dog- related, in house
2008[b]	52/F	Obstructive uropathy	NA	Pantoea agglomerans	O	Cipro/ Oral	Close contact with a dog
2013[c]	49/M	Type 1 diabetes	1 year	Pasteurella multocida	O	Cefta/ IP Amoxi/ Oral	Pet exposure, direct inoculation unknown
2020[d]	39/F	Hypertension	8 weeks	Staphylococcus pesudintermedius	O	Vanco and Pipera/ IV	Dog sleeps with the patient
Our case	76/F	Hypertension	15 years	Pantoea agglomerans	O	Cefta/ IP	Dog freely enters PD room

ESKD, end-stage kidney disease;, NA, not available;, IP, intraperitoneal;, IV, intravenous;, PD, peritoneal dialysis;, Genta, Gentamicin;, Cefa, Cefazolin;, Cipro, Ciprofloxacin;, Cefta, Ceftazidime;, Amoxi, Amoxicillin-Clavulanate;, Vanco, Vancomycin;, Pipera, Piperacillin-Tazobactam

[a] REFERENCE 5.
[b] REFERENCE 4.
[c] REFERENCE 6.
[d] REFERENCE 7.

Table.jpg

A



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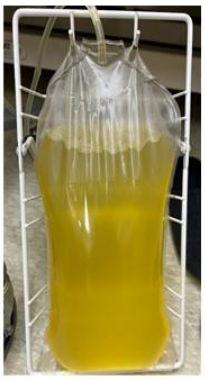

Fig. 1. Patient's clinical characteristics (A) Patient's clinical progress. Both the leukocyte count and neutrophil ratio in the peritoneal fluid have decreased. On day 2 after hospital visit, based on interim report findings, cefazolin was discontinued, and only ceftazidime was continued. On day 15 after the hospital visit, the leukocyte count decreased to 4, leading to discontinuation of antibiotic therapy. (B) Clean exit site of the peritoneal dialysis catheter, no discharge detected. (C) Peritoneal fluid drawn on the day of admission. (D) Peritoneal fluid obtained on day 3 of hospitalization, showing improved turbidity.