

## Extended spectrum beta-lactamases gene acquired multidrug-resistant *Klebsiella pneumoniae* in a dog

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Extended-spectrum beta-lactamases (ESBLs) efficiently hydrolyze extended spectrum beta-lactams such as cefotaxime, ceftriaxone, ceftazidime, and aztreonam. ESBLs are most often plasmid-mediated. A 2 year-old female pomeranian dog was referred to Veterinary Medical Center in Chungbuk National University with hind limb paralysis and wounds after the traffic accident. In radiographic examination, multiple pelvic fractures and inguinal hernia were identified. Anemia was also observed on complete blood count. After surgical correction day 6, accumulated pus was observed in the subcutaneous of surgical site. As an empirical antibiotic therapy, ampicillin/sulbactam (30mg/kg, IV, TID) was administrated. However, the causative bacteria had resisted against cephalosporins without clavulanate, penicillins, aminoglycosides, trimethoprim-sulfamethoxazole, and aztreonam. The bacterial identification and the PCR for ESBL genes showed that *Klebsiella pneumoniae* that had acquired the TEM gene evoked the suppuration. Cefotaxime, third-generation cephalosporin, with clavulanate showed also susceptible bactericidal effect. Meropenem was administrated (12mg/kg, SC, TID) for 5 days during the treatment on the basis of MIC test. After the meropenem therapy, the suppuration was completely disappeared. During the patient treatment, *K. pneumoniae* was isolated on the patient owner's hands. A multidrug-resistance ESBL genes (TEM, SHV, and CTX-M) were confirmed in the *K. pneumoniae*. These results suggest that the bacteria that evoked the suppuration in the patient may be transferred to the owner. For identifying the cross-transmission between the owner and the patient, conserved-segment PCR (CS-PCR) and RFLP will be needed additionally for integrons that can transfer the resistance gene cassettes.

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