



Vibrio hollisae isolated in a Hydropneumothorax

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ABSTRACT

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Introduction: *Vibrio hollisae* is a bacterium that is commonly responsible of digestive infections but in very rare cases, it can be isolated in other biological liquid.

Case report: This case report is about a young man who suffered from an hydropneumothorax infected by *Vibrio hollisae*, following a chylous pleurisy drainage. The patient improved after surgical drainage and adequate antibiotherapy.

Discussion and conclusion: Our case rises awareness of the extra-intestinal localisation of *Vibrio hollisae*. The microbiologist should know that it may not grow in MacConkey plate agar even if it's a gram-negative bacillus. The best growth is obtained with sheep blood agar plate.

KEYWORDS:

Vibrio hollisae,
hydropneumothorax

INTRODUCTION

Vibrio hollisae also known as *Grimontia hollisae* is a halophilic species. It is difficult to isolate the bacteria in common culture media used for *Vibrio* species. This organism usually causes gastroenteritis but in rare cases, it might be responsible of other type of infections.

CASE REPORT

We report the case of a 22 years old male patient without any significant past medical history. He was admitted in the emergency room for several days of severe chest pain and abdominal pain with persistent cough. The patient did not report diarrhea, chills or fever. He denied recent travel, contact with sick people, or recent sea swimming.

On the admission, the young man was cachectic and pale. He was dyspneic and afebrile. The physical examination found dullness to percussion in the right hemithorax. His abdomen had diffuse tenderness to palpation without rebound or guarding. The remainder of his physical exam was unremarkable.

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The radiological investigations found mild abdominal effusion and right pleural effusion. The pleural puncture found a chylous liquid. The lymphography showed a lesion on thoracic duct reason why the patient undergone surgery that consisted of ligate the injured vessel. He improved significantly.

Few weeks later, the patient came back to the ER for the recurrence of the pleuritic chest pain with fever. The CT scan revealed a right hydropneumothorax. The major axis was 120 mm (Figure 1 and 2).

The blood chemistry and hematology results showed: CRP test was at 48,8 mg/L, hemoglobine 10,2 g/dl, leucocytes were a 9370 /mm³, Platelets were at 632 000 /mm³ and the protids in the liquid was 39g/L.

The laboratory did a cytological and bacteriological examination of the pleural liquid puncture. The results showed a purulent liquid with leukocyte uncountable.

The routine culture was positive with moderate growth of colonies on MacConkey agar plate, moderate gray colonies on the chocolate agar plate and Brain-heart infusion was turbid after 48 hours of incubation (Figure 2)

The germ was a small gram-negative rod in the direct examination. It was oxidase positive. To identify the bacteria, we used Api 20 NE (BioMérieux Marcy-l'Etoile - France) that is a commercial biochemical identification system for gram-negative non-Enterobacteriaceae. The test strip contains 20 miniature biochemical tests. We inoculated

each strip with a sample of a bacterial colony. We converted the biochemical results into a numerical profile. The code identified *Vibrio hollissae*.

The patient was hospitalized in the thoracic surgery department where a right thoracic drainage was performed bringing a total of 3 liters of frankly purulent liquid without pulmonary expansion on the control radiograph, after multidisciplinary consultation the patient was programmed for right pulmonary decortication under Uniportal VATS, the patient progressed well postoperatively under antibiotic therapy made of ceftriaxone 2g/day in association with metronidazole 1500 mg/day with incentive respiratory physiotherapy. the patient was declared discharged on postoperative day 4 after a chest x-ray showing total lung expansion.

DISCUSSION

The vibrios are Gram-negative rod-shaped bacteria that are fermentative, catalase and oxidase positive. They are motile by a polar flagellum [1]. Classically, we distinguish 26 species of vibrio. Twelve species have clinical importance [2]. *Vibrio hollissae* is a halophilic vibrio species identified by Hickman et al. for the first time [3].

Thompson et al. reclassified *Vibrio hollissae* as *Grimontia hollissae* in 2003. The biochemical characters are the indole production and nitrate reduction are positive but the Voges-Proskauer reaction, arginine dihydrolase, and lysine and ornithine decarboxylase are all negative [4].

The *Vibrio hollissae* strains may not grow on MacConkey agar and easily grow on chocolate agar plate [3].

Primarily, it is known to be implicated in fish diseases [5].

In human pathology, it is usually linked to severe gastroenteritis. It may cause diarrhea, abdominal pain, vomiting, and fever [6] to healthy and immunocompetent people after eating infected seafood as: raw oysters, clams and shrimp [3, 7-12]. In these cases, the diagnosis was based on positive stool test results.

In the literature, few cases from gulf, atlantic and pacific coasts, of infected wound by vibrio hollissae are reported, due to direct seawater exposition of skin injuries.

Rarely, the *Vibrio hollissae* was isolated in blood samples during septicemia (only 4 cases: 3 of them had liver diseases) [13].

We found no previous cases of vibrio hollissae isolated in pleuritic liquid.

CONCLUSION

The *Vibrio hollissae* human infection is rare. It mainly causes gastrointestinal symptoms associated generally with consumption of seafood [14]. Our case rises awareness of the extra-intestinal localisation of vibrio hollissae especially in coastal cities or after seafood exposure. However, the microbiologist should know that it may not grow in MacConkey plate agar even if it's a gram-negative bacillus. The best growth is obtained with sheep blood agar plate.

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Captions to illustrations

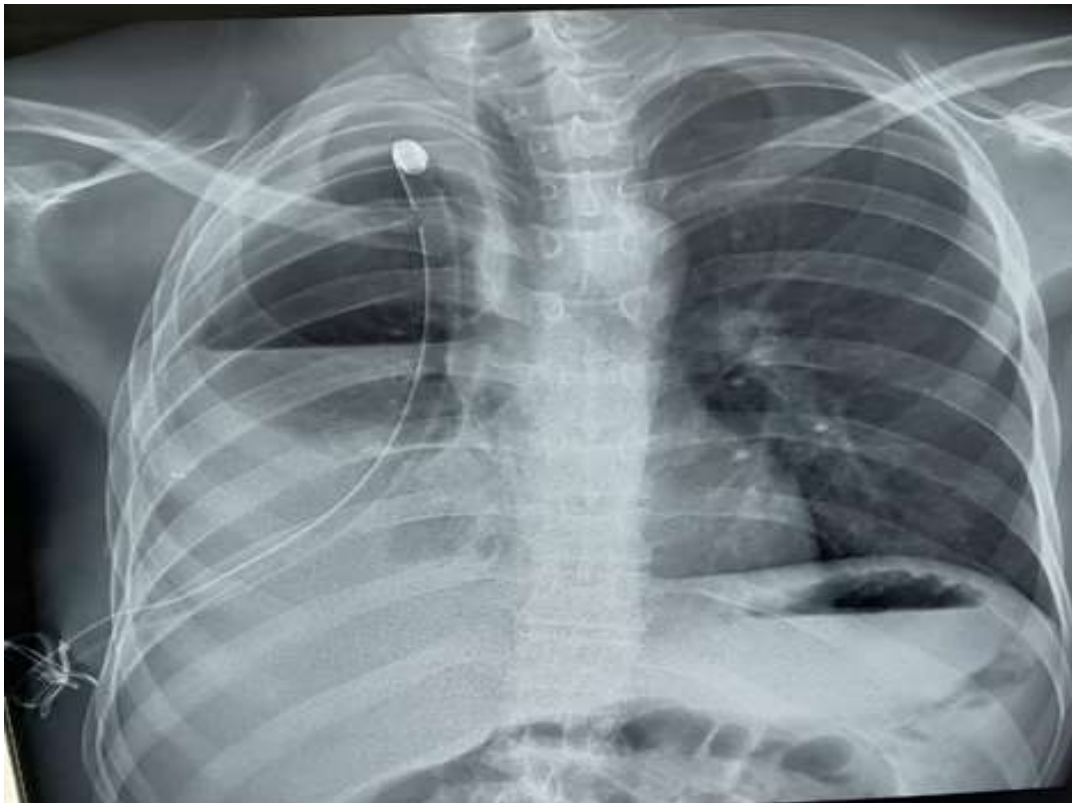


Figure 1: X-Ray showing a right hydropneumothorax

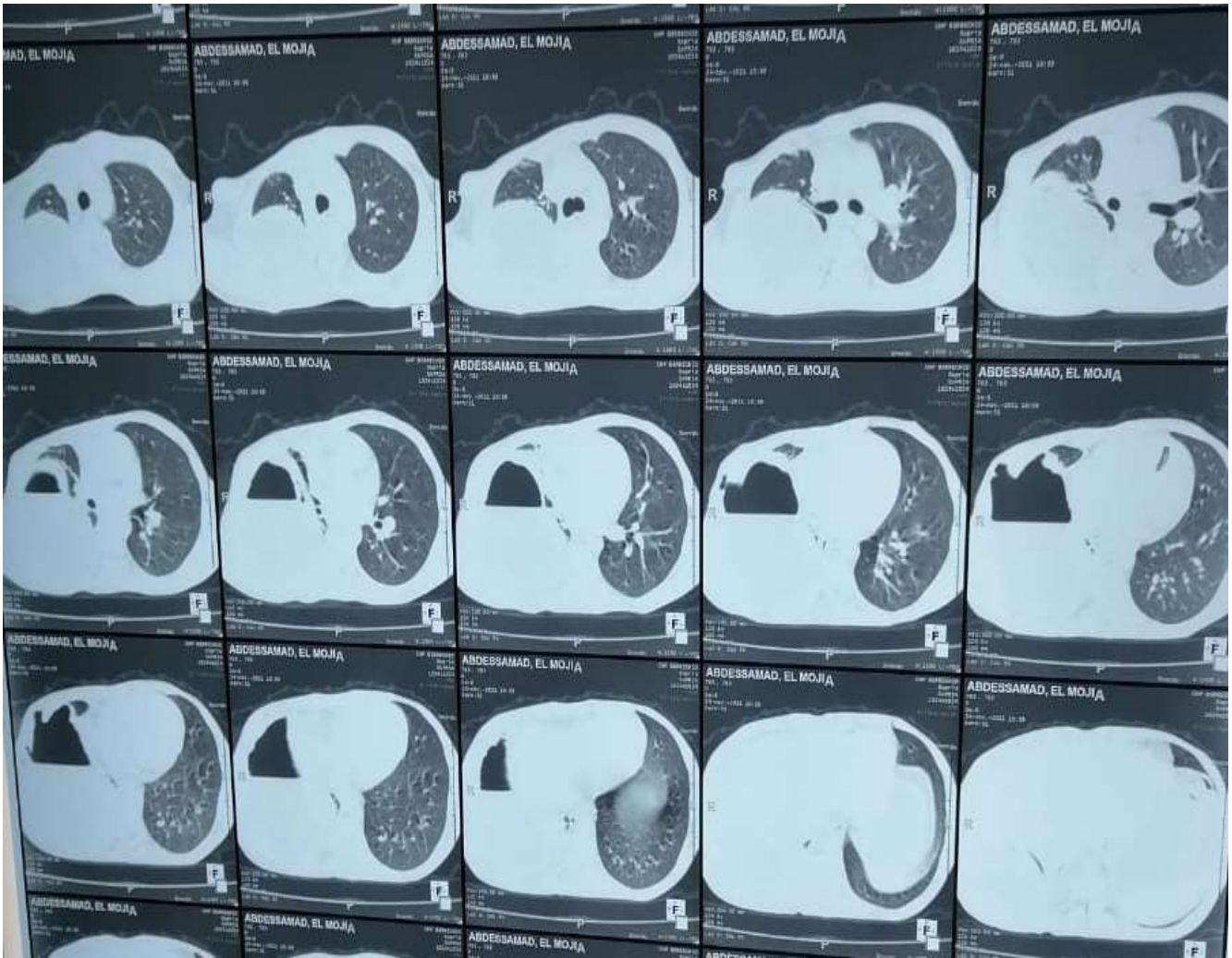


Figure 2: CT-Scann in the right showing a right hydropneumothorax

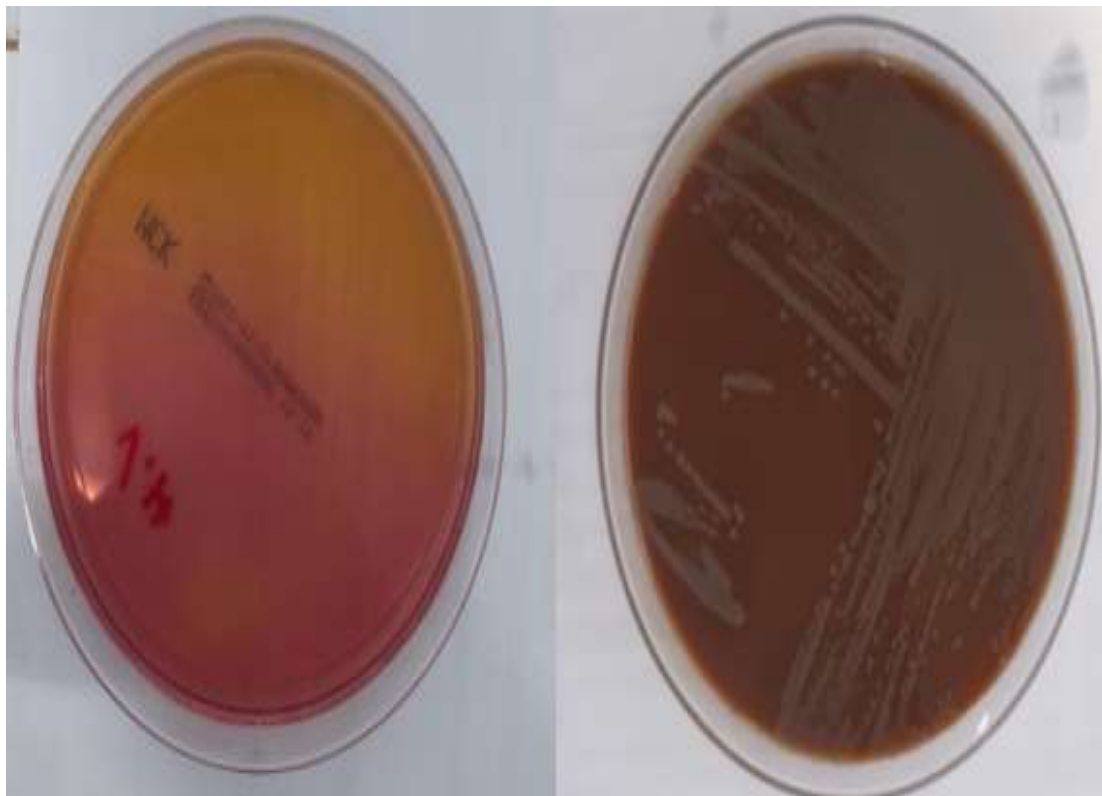


Figure 2: *Vibrio hollisae* culture in MacKonkey agar plate in the left (a) and chocolate agar plate in the right (b)