Magnetic adjustment leading to rare case of Enterococcus fecium meningitis and abdominal wall abscess

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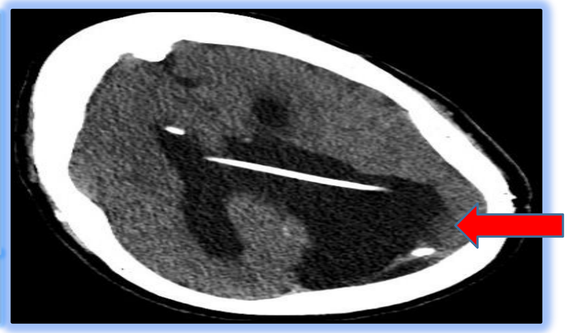
INTRODUCTION

- Enterococcus species are uncommon causes of meningitis especially associated with neurosurgical procedures and CSF devices.
- Rare reports of cases of E.fecium meningitis are found with only 0.3-4% incidence.
- Here we present a case of meningitis with Enterococcus fecium which resulted from complications after wound dehiscence repair.

CASE

- A 55-year-old male presented for evaluation of fever, seizures, left-sided abdominal pain, and agitations.
- He had a past medical history of congenital hydrocephalus with Dandy-Walker malformation with ventriculoperitoneal shunt and seizure disorder.
- On admission, he was febrile, alert but not oriented to time. Kernig's and Brudzinski's signs were negative. Other vitals and physical exam was unremarkable.
- Strata valve was placed when he had a revision of his shunt a year ago.
- He had a liking to listen to music with iPod in his ears and seemed there was an adjustment made by putting the magnetic field up against the shunt.
- In attempts to maintain the shunt at a certain setting, it would not stay, and had difficulty maintaining his ventricles which required change from a strata to a certas plus valve 4 months prior with normal postoperative follow-up with clean and dry wound except for one area where the skin was thin and a shunt was visible.

Fluid Source		Cerebral spinal
Fluid Volume		14
Fluid Color		Pink
Fluid Appearance		Cloudy
Fluid WBC		9801 H*
Fluid RBC		2750
Fluid Tot Cell Count		200
Fluid Neutrophils		100
Fluid Lymphocytes		1
CSF Glucose	< 10 L*	
CSF Total Protein	295 H	



Hydrocephalus and ventricular shunt : CT Brain

CASE CONTINUED

- Skin flap surgery was done 1 month back to protect the shunt with negative postoperative cultures and prophylactic antibiotics with normal wound healing.
- This admission, he had sepsis with lactic acidosis which resolved later with IV fluids and also could be transient due to seizures.
- His course had worsening peripheral neutrophilic leukocytosis. CSF showed a glucose concentration of 10 mg/dl, a protein level of 295 mg/dl, and a white cell count of 9801/μL with 99% neutrophils and 1% lymphocytes.
- Gram staining of CSF revealed gram-positive cocci and gram-negative bacilli, culture yielded Enterococcus fecium sensitive to vancomycin.
- CSF panels were negative for viral, cryptococcal, and other bacterial meningitis.
- Shunt study with an extensive calcified plaque along its course along with an apparent kink in the upper thorax. Brain CT showed acute hydrocephalus and diffuse sulcal effacement due to mass effect. CT scan of his abdomen showed a left peritoneal wall enhancing fluid collection concerning an abscess. This abscess culture also grew enterococcus.
- The patient became increasingly septic even with Vancomycin, Linezolid, Piperacillin/Tazobactum and had to be transferred to a higher level of care.
- His right VP shunt system was removed entirely and an external ventricular drain was placed.
- He continued to improve on vancomycin and cefepime.
- He finally had reimplantation of the right frontal ventriculoperitoneal shunt. His course was further complicated by febrile and worsening seizures.
- He had to be on prolonged physical, speech and occupational rehabilitation due to aphasia and ambulatory dysfunction.

DISCUSSION

- Enterococcus fecium is one of the uncommon cause of meningitis especially seen in neurosurgical procedures and with congenital malformations which are present in this case as well.
- This case also points towards serious complications implicated using magnetic ear devices that warrant adjustment surgery which can lead to infectious complications.
- As there is also abdominal wall abscess along with meningitis, there can be debate on GI origin of enterococcus. But, abdominal wall abscess is likely from VP shunt seeding from infected CSF.
- This case also shows how debilitating can be Enterococcus meningitis which also has very high mortality rate.

REFERENCES

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