

### Chief Complaint

Bump On My Back

### HPI

A 63 yr/old female with a past medical history of SVT s/p ablation presents to the ED with a chief complaint of a "bump on my back." Patient notes that she has had a painless growing mass over the midline of her spine over the last week. On further questioning she reports she had a "spine surgery" to resect a spinal meningioma tumor four months prior in a different city. Up until this point she had been healing well and denies any previous complications from the surgery. She reports no trauma pain, or redness to the site. She denies fever, chills, nausea, and vomiting. She denies any new tingling, weakness or changes in urinary or bowel movements.

Physical exam is remarkable for a large fluctuant mass over the midline of the cervical and upper thoracic spine measuring approximately five cm wide and 11 cm long. Previous surgical incision well healed and no dehiscence or purulent drainage noted. The overlying skin color is appropriate. The mass is non-tender, no erythema or induration to the site. Lungs are CTA, there are no neurologic deficits noted and the rest of the physical exam was unremarkable.

Vitals: 98.3° F 92 154/78 14 RR

### Laboratory/Diagnostics

Laboratory: WBC 7.0  
HGB/HCT: 12.4/39  
ESR/CRP: WNL  
CHEM 23: WNL

### Q & A

**Question #1:** What is your initial differential diagnosis for the patient's presenting complaint?

**Answer # 1:** The differential diagnosis includes but is not limited to: CSF Leak, postoperative abscess, epidural abscess, hematoma, AV malformation, regeneration of tumor, and excessive scar tissue

**Question #2:** What laboratory and radiology findings help to delineate your initial differential diagnosis and further support your final diagnosis?

**Answer # 2:** The laboratory finding of a normal whole blood profile, and ESR/CRP would rule out most of the inflammatory and infectious etiologies. The point of care ultrasound revealing clear uniform anechoic fluid along with lack of evidence of cobble stoning and loculations did not appear infectious or inflammatory. The ultrasound appearance along with lack of laboratory infectious/inflammatory markers was more consistent with that of a CSF leak and thus a stat Cervical and Thoracic MRI Spine with and without contrast was ordered. The MRI clearly depicts epidural fluid collection which tracks into the subcutaneous fat along the incision line consistent with a CSF leak also known as a giant pseudomeningocele.

**Question #3:** Given the above Imaging findings, how is this patient best managed?

**Answer # 3:** Early neurosurgical consultation is key to managing postoperative CSF leaks. Small leaks that are asymptomatic can be monitored and potentially resolve on their own. Patients with symptoms of headache, pain, infection, paresthesia's, deficits or a large fluid collection usually require intervention either by neurosurgical placement of a shunt, or open surgical repair in more severe cases. The patient was admitted and had a lumbar drain placed by neurosurgery, she made a full recovery and was subsequently discharged.

### Discussion

Pseudomeningoceles, otherwise known as CSF leaks, are rare but known complications of cranial and spinal surgeries. The majority are iatrogenic secondary to surgery; however, they can occur from trauma, and spontaneously, in rare cases. The majority of spinal CSF leaks are seen in the lumbar spine, this is due to increase hydrostatic pressure and the overall prevalence of lumbar surgeries (3.) CSF leaks arise from an unintentional dural tear, this tear allows for one-way CSF flow into extradural tissue resulting in a false cyst, or pseudomeningocele (1). Patients will typically present with a growing fluctuant mass under their incision site. They can also present with symptoms of pain, neurologic deficits, neuropathy, nausea, vomiting and headaches (1). Infection and aseptic meningitis are potentially life-threatening complications of pseudomeningoceles and must be kept in the differential in a patient with postoperative spinal mass and infectious signs (3).

Diagnosis is made with physical exam and MRI imaging. Treatment options vary depending on the size and severity of the pseudomeningocele. Percutaneous subarachnoid catheters allow for drainage of the cyst, and are a less invasive option while open repair with dural closure has also been described (2,3).

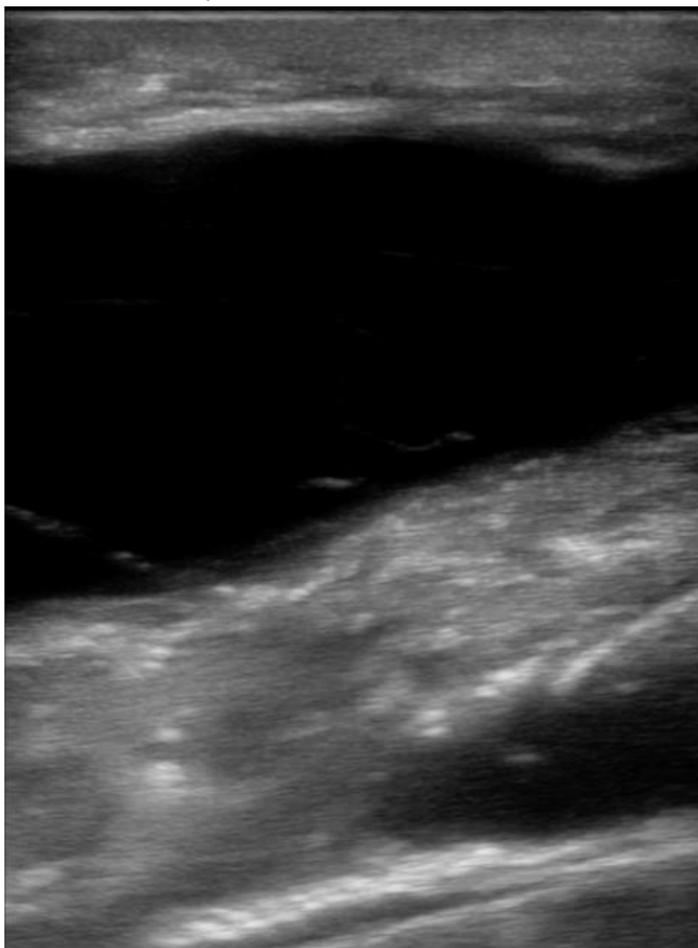
### Pearls

- Pseudomeningoceles, otherwise known as CSF leaks, are a rare but known complication of spinal surgery, and can occur after trauma as well.
- Symptoms of a CSF leak are most commonly swelling at the surgical site, but can also often include headaches, neurologic deficits, and pain.
- The diagnostic test of choice is an MRI with and without contrast of the spine, followed by prompt neurosurgical consultation.
- Point of care ultrasonography can be useful in identifying fluid collections and differentiating infectious or vascular causes.

### References

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2. Fang Z, Tian R, Jia Y-T, Xu T-T, Liu Y. Treatment of cerebrospinal fluid leak after spine surgery. *Chinese Journal of Traumatology.* 2017;20(2):81-83. doi:10.1016/j.cjtee.2016.12.002.
3. Weng Y-J, Cheng C-C, Li Y-Y, Huang T-J, Hsu RW-W. Management of giant pseudomeningoceles after spinal surgery. *BMC Musculoskeletal Disorders.* 2010;11:53. doi:10.1186/1471-2474-11-53.
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Ultrasound Over the Spine



MRI of the Cervical Spine

