# Rare Neuraxial Complication in Obstetric Anesthesia: Cerebrospinal Fluid-Cutaneous Fistula

Yaa Kwansa, MD, Iryna Chugaieva, MD

## Case:

**Day 1: CSE for ECV:**
17 G Touhy w/ LOR at 5 cm,
25 G Pencan spinal needle,
19 G catheter

**Day 2: Spinal for C-section:**
1.6 mL 0.25% bupivacaine,
15 mcg fentanyl,
150 mcg morphine

Paged to examine slow oozing from neuraxial site of asymptomatic patient

34 yo primigravid at 37w3d
CSE for scheduled external cephalic version (ECV), now POD#1 s/p C-section with spinal

Neurosurgical consult and workup

**EXTERNAL CEPHALIC VERSION → C-SECTION**

**POST-PARTUM**

Unsuccessful ECV, observation → met criteria for gHTN, C-section scheduled for the following day

Patient complained of pain at catheter site overnight; epidural checked for patency, nothing infused

Bedside exam: asymptomatic, two neuraxial sites at the same level, larger of the two (presumed CSE site) with leakage of clear fluid

Fluid sampled for POC glucose: 55 mg/dL
(nl CSF glucose: 50-80 mg/dL)

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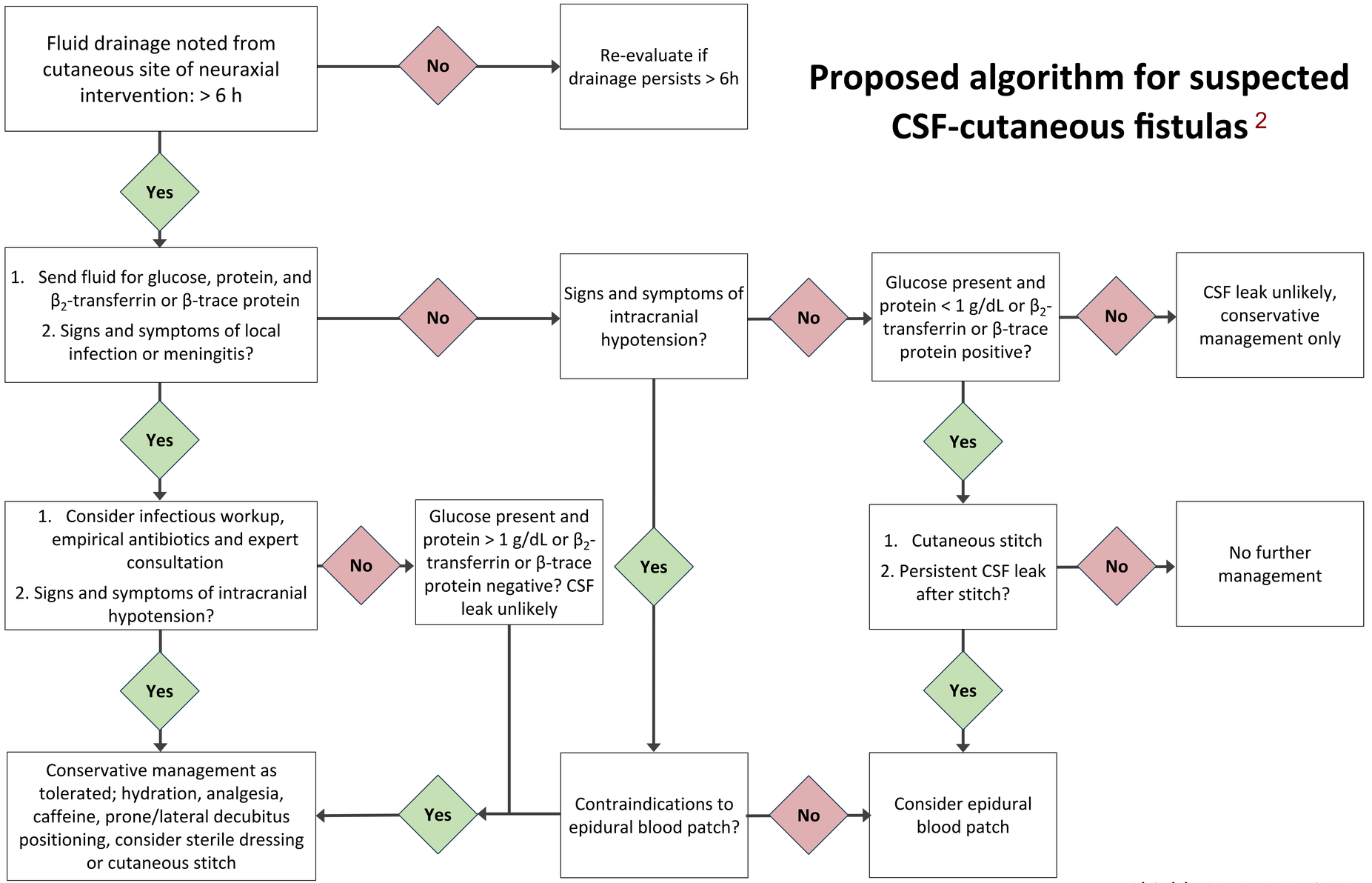
# Background

- Neuraxial analgesia is considered the gold standard for pain relief during childbirth
- CSF-cutaneous fistula is a rare but serious complication of these techniques with an estimated incidence of 0.16% [1]
- Fluid emerging from neuraxial puncture site is not necessarily CSF; can be interstitial fluid due to edema, a seroma, or local anesthetic

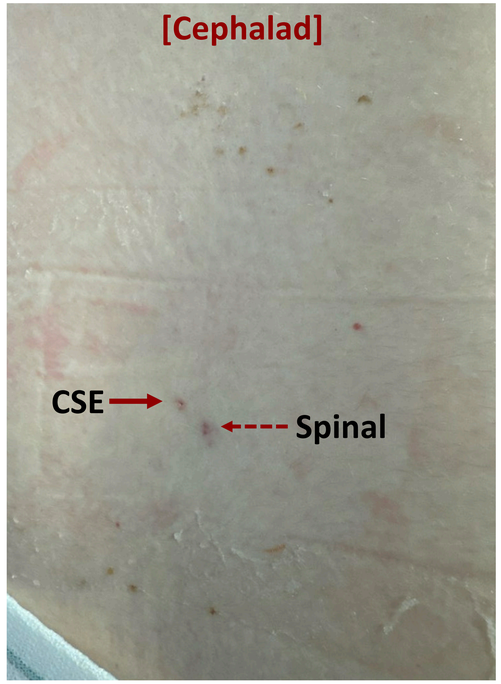
# Management

- No standardized treatment approach for this complication
- In the asymptomatic patient, there is no guideline or consensus for the management of a CSF-cutaneous fistula

## Proposed algorithm for suspected CSF-cutaneous fistulas [2]




1 Shields 2019, 2 Tsai 2014




## Patient Outcome:

- No further fluid leakage after placement of cutaneous stitch
- Patient discharged home the following day
- Routine follow up revealed patient had no further complications

## Learning Points:

- **Diagnosis:** glucose, $\beta_2$-transferrin, and β-trace protein
- **Risk Factors:** multiple attempts at dural puncture or epidural placement; deposition of blood clots or tissue by Touhy or spinal needles [3]; increase in techniques such as DPE, CSE, and intrathecal catheters may correlate with increased incidence
- **Treatment:**
  - Conservative management
  - If asymptomatic and leakage is persistent, cutaneous suture
  - If symptoms of PDPH, start with conservative management then consider blood patch
  - If concern for infection, neurosurgical and/or ID consult
- **Outcomes:** typically, no further complications