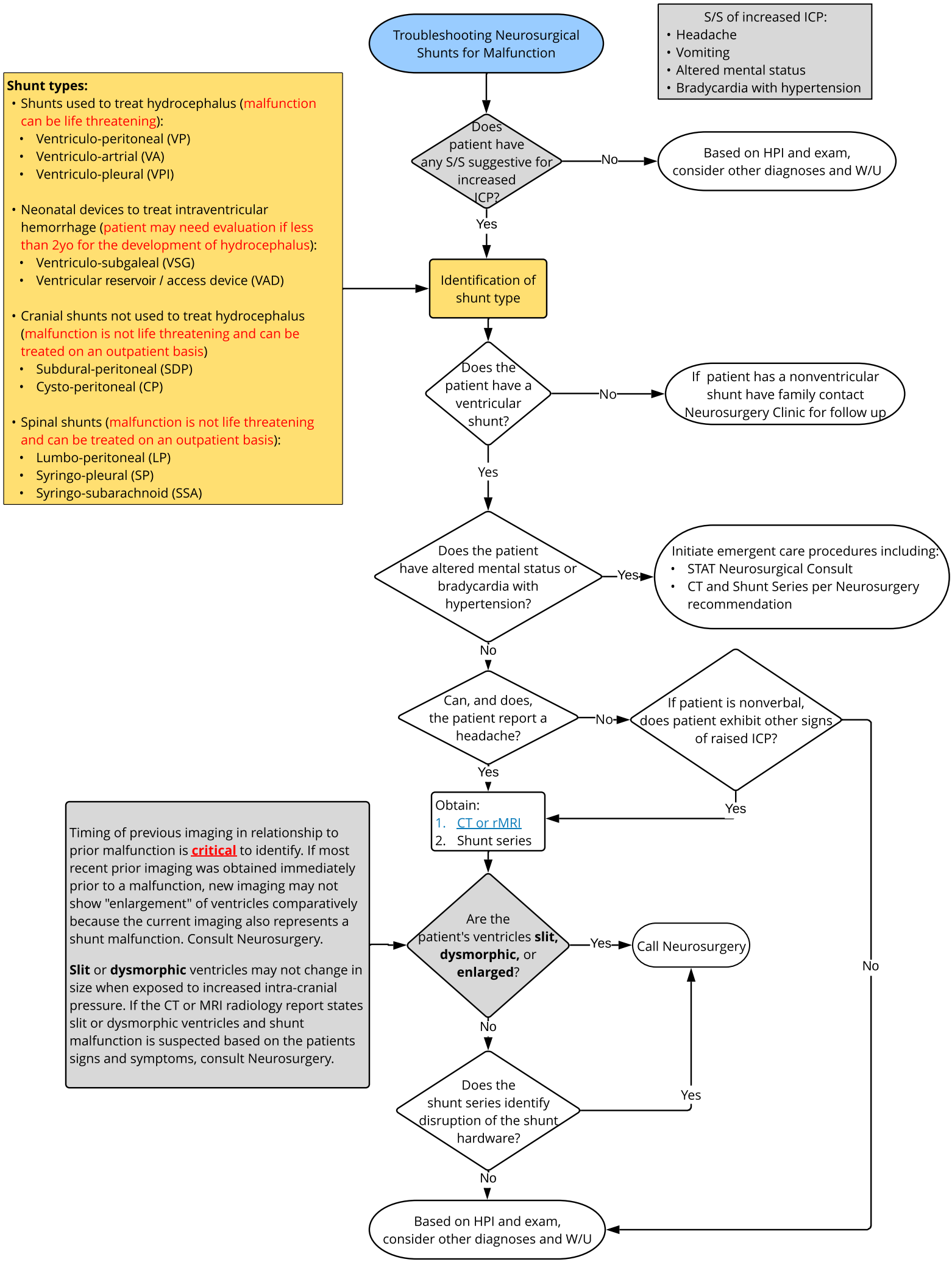
Troubleshooting Neurosurgical Shunts for Malfunction
S/S of increased ICP:
• Headache
• Vomiting
• Altered mental status
• Bradycardia with hypertension
Shunt types:
• Shunts used to treat hydrocephalus (malfunction can be life threatening):
• Ventriculo-peritoneal (VP)
• Ventriculo-artrial (VA)
• Ventriculo-pleural (VPI)
• Neonatal devices to treat intraventricular hemorrhage (patient may need evaluation if less than 2yo for the development of hydrocephalus):
• Ventriculo-subgaleal (VSG)
• Ventricular reservoir / access device (VAD)
• Cranial shunts not used to treat hydrocephalus (malfunction is not life threatening and can be treated on an outpatient basis)
• Subdural-peritoneal (SDP)
• Cysto-peritoneal (CP)
• Spinal shunts (malfunction is not life threatening and can be treated on an outpatient basis):
• Lumbo-peritoneal (LP)
• Syringo-pleural (SP)
• Syringo-subarachnoid (SSA)
Does patient have any S/S suggestive for increased ICP?
No
Based on HPI and exam, consider other diagnoses and W/U
Yes
Identification of shunt type
Does the patient have a ventricular shunt?
No
If patient has a nonventricular shunt have family contact Neurosurgery Clinic for follow up
Yes
Does the patient have altered mental status or bradycardia with hypertension?
Yes
Initiate emergent care procedures including:
• STAT Neurosurgical Consult
• CT and Shunt Series per Neurosurgery recommendation
No
Can, and does, the patient report a headache?
No
If patient is nonverbal, does patient exhibit other signs of raised ICP?
Yes
Yes
Obtain:
1. CT or rMRI
2. Shunt series
Timing of previous imaging in relationship to prior malfunction is critical to identify. If most recent prior imaging was obtained immediately prior to a malfunction, new imaging may not show "enlargement" of ventricles comparatively because the current imaging also represents a shunt malfunction. Consult Neurosurgery.
Slit or dysmorphic ventricles may not change in size when exposed to increased intra-cranial pressure. If the CT or MRI radiology report states slit or dysmorphic ventricles and shunt malfunction is suspected based on the patients signs and symptoms, consult Neurosurgery.
Are the patient's ventricles slit, dysmorphic, or enlarged?
Yes
Call Neurosurgery
No
Does the shunt series identify disruption of the shunt hardware?
Yes
No
Based on HPI and exam, consider other diagnoses and W/U
No