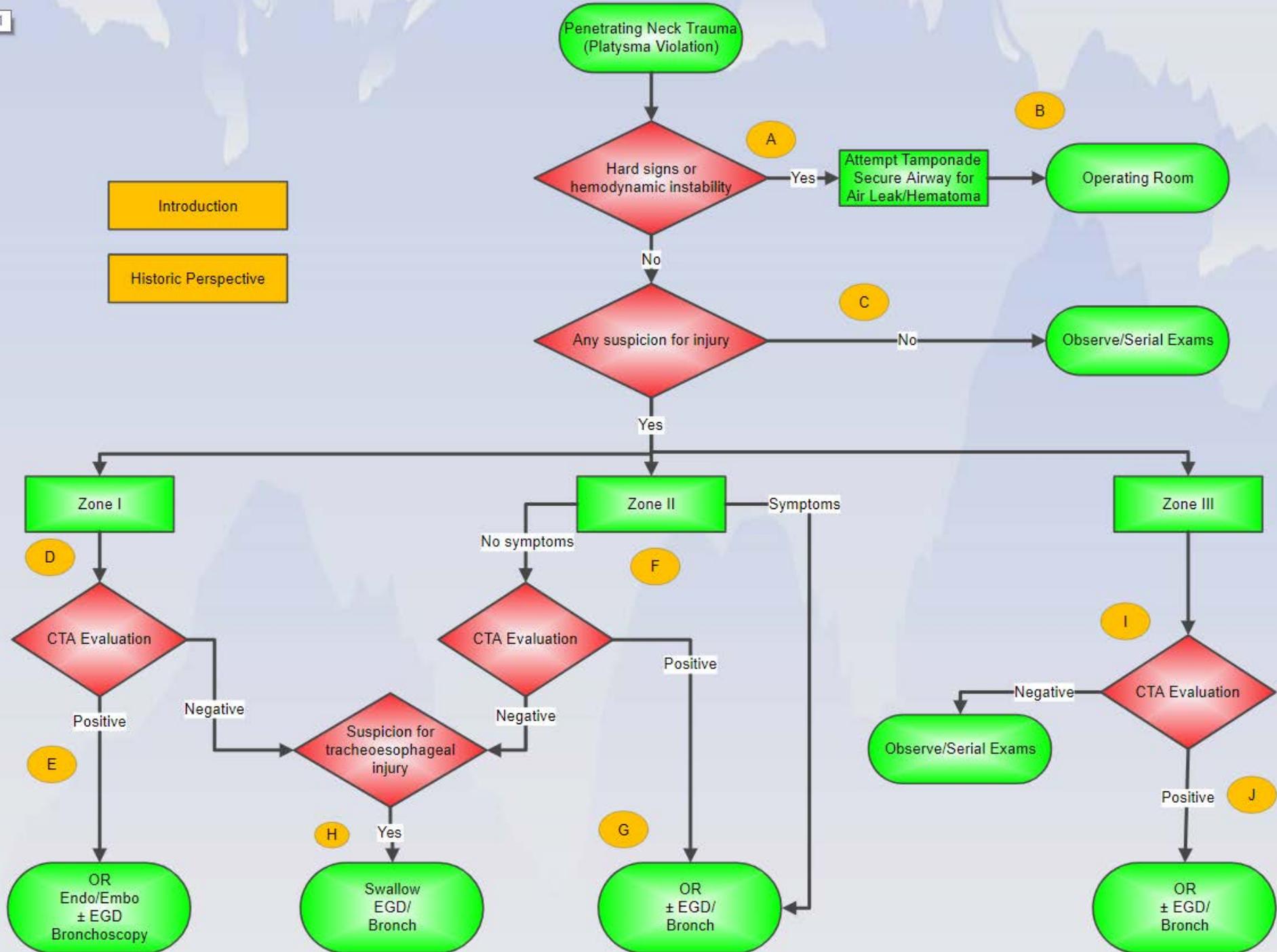


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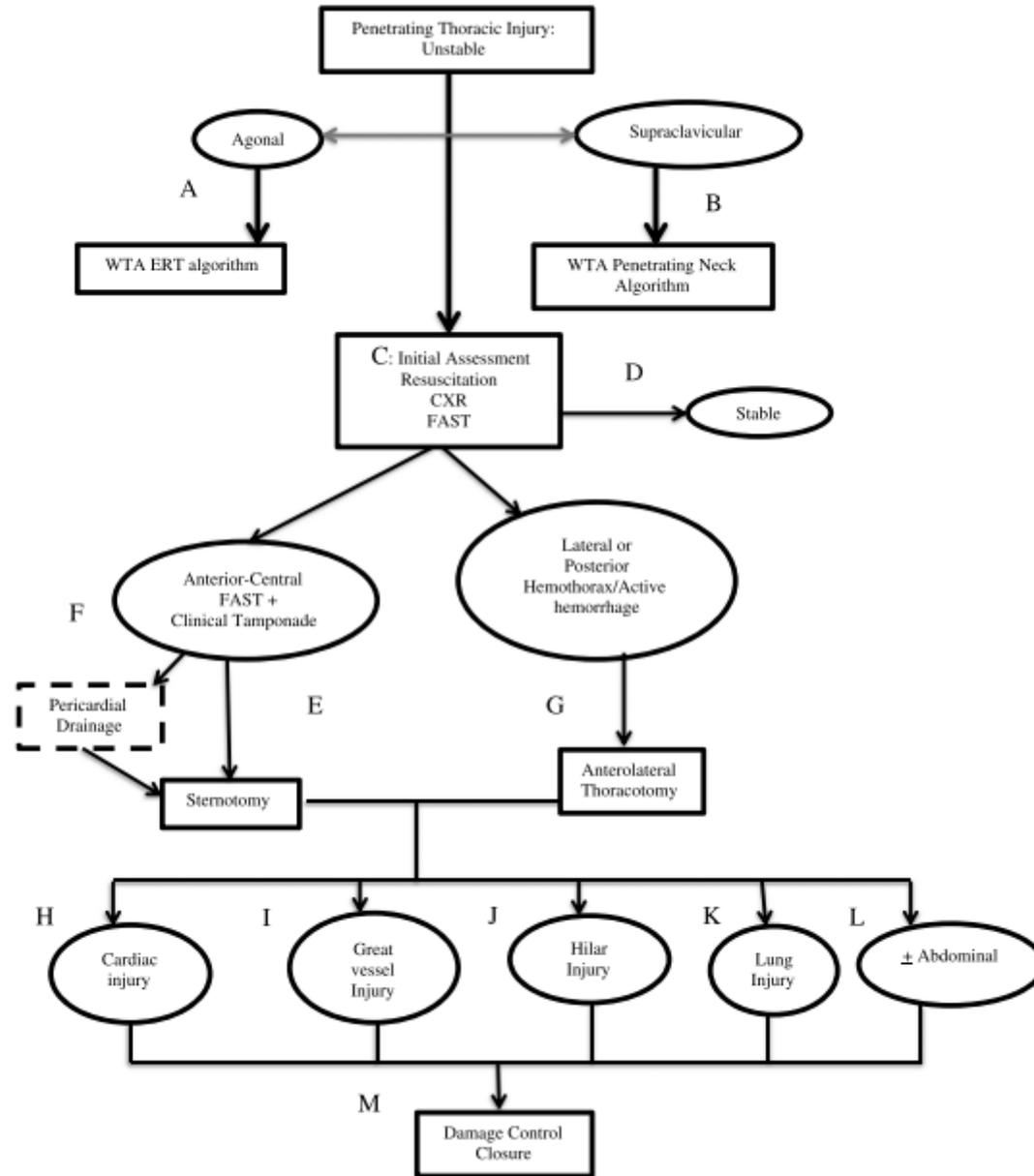


Figure 1. Management of the stable patient.

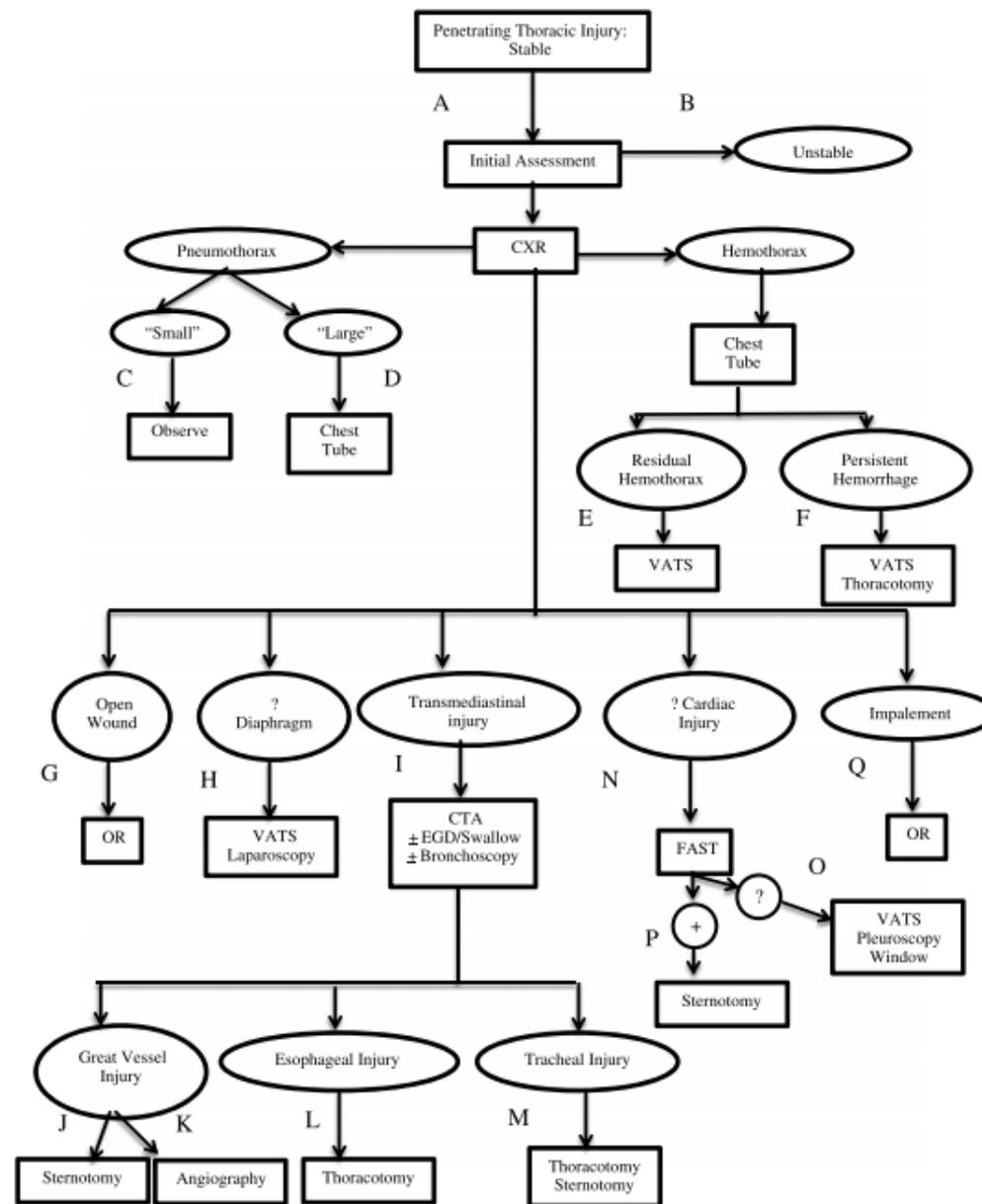
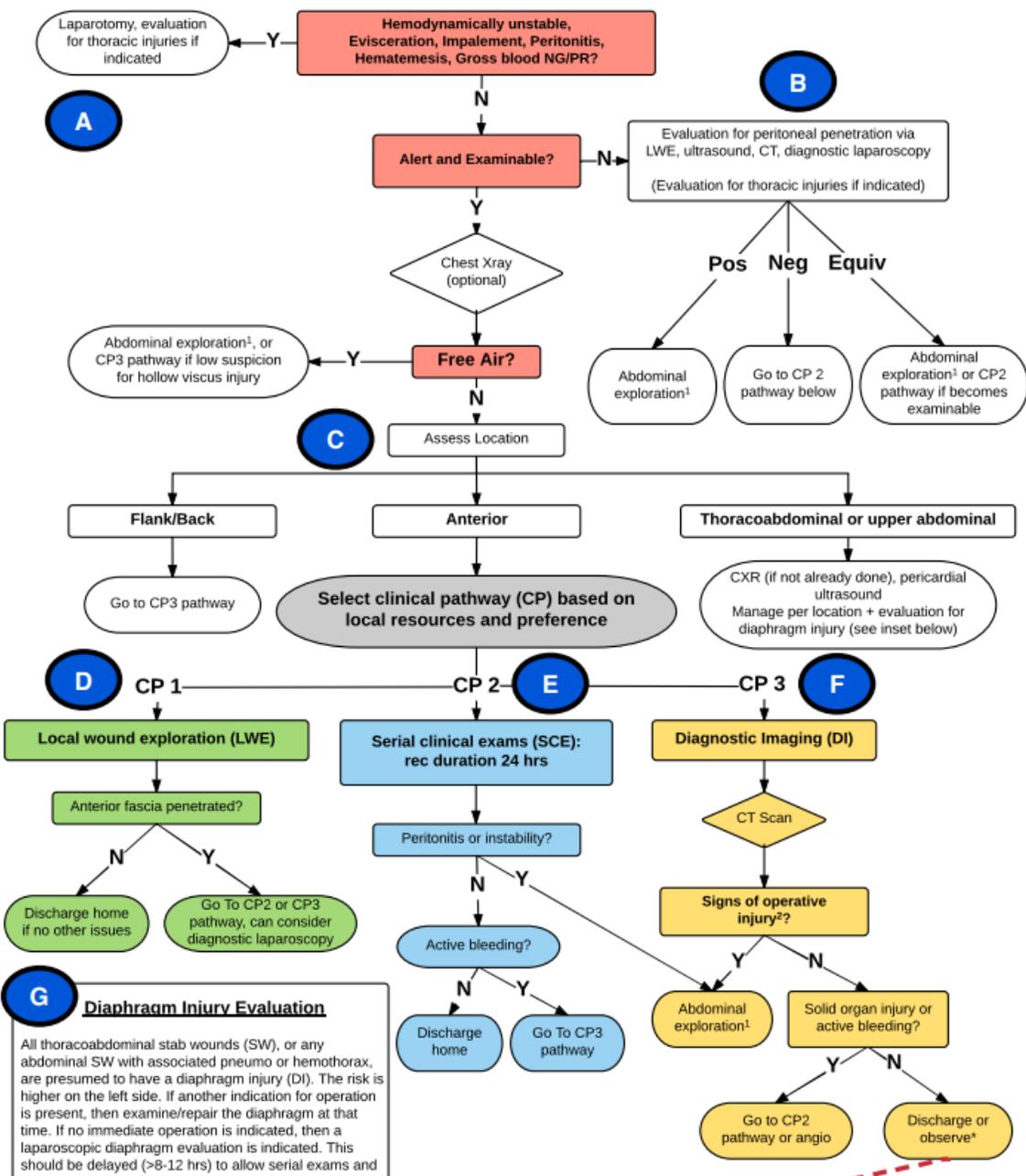


Figure 2. Management of the unstable patient.

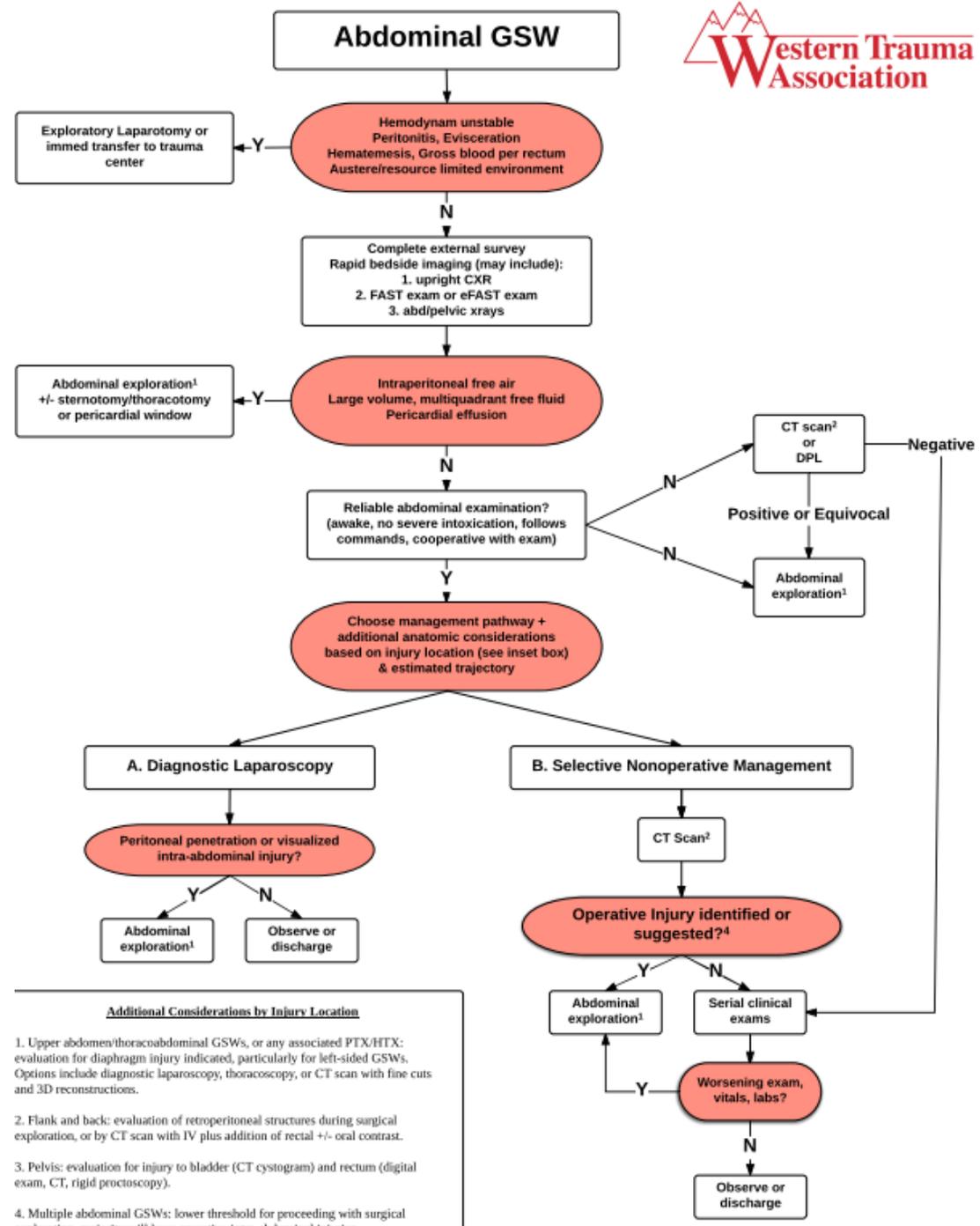


G Diaphragm Injury Evaluation

All thoracoabdominal stab wounds (SW), or any abdominal SW with associated pneumo or hemothorax, are presumed to have a diaphragm injury (DI). The risk is higher on the left side. If another indication for operation is present, then examine/repair the diaphragm at that time. If no immediate operation is indicated, then a laparoscopic diaphragm evaluation is indicated. This should be delayed (>8-12 hrs) to allow serial exams and ensure no hollow viscus or other operative injury is present. Thoracoscopy is an acceptable alternative, and is the procedure of choice if a co-existing retained hemothorax is present.

There is some data now that high resolution CT scan may provide adequate imaging to rule out a DI. A focused

* decision to discharge in CP3 should be individualized based on the clinical evaluation, imaging findings, and reliability of the patient. Note that CT scan can have false negatives for hollow viscus injury, particularly when performed shortly after the initial stab injury.



Additional Considerations by Injury Location

1. Upper abdomen/thoracoabdominal GSWs, or any associated PTX/HTX: evaluation for diaphragm injury indicated, particularly for left-sided GSWs. Options include diagnostic laparoscopy, thoracoscopy, or CT scan with fine cuts and 3D reconstructions.
2. Flank and back: evaluation of retroperitoneal structures during surgical exploration, or by CT scan with IV plus addition of rectal +/- oral contrast.
3. Pelvis: evaluation for injury to bladder (CT cystogram) and rectum (digital exam, CT, rigid proctoscopy).
4. Multiple abdominal GSWs: lower threshold for proceeding with surgical exploration, majority will have operative intra-abdominal injuries.

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Types of Vascular Trauma

Etiology

Risk to the Patient

A

Initial assessment of injured extremity

- Primary survey of ATLS – bleeding present?
- Manual compression, compression dressing, or tourniquet
- Secondary survey of ATLS – neurovascular status?

B

Hard signs

E

Soft signs

P

Pulses are difficult to assess

Shotgun wound or multiple fractures?

Yes

No

Localize injury with diagnostic study

D

Enlarge cuff to assess API

Q

Obesity?

F

Physical exam normal or API > 0.9

H

S

Pulses or API still unclear; hand or foot cool?

R

Shock or hypothermia present?

C

Operating Room

G

Discharge and follow up in clinic

Imaging

Resuscitate and rewarm patient; reassess pulses and arterial pressure index

Upper extremity/ Femoral/ Popliteal

L

Location of lesion

M

Anterior tibial/ Tibioperoneal

Interventional Radiology

I

Arteriography

J

CT arteriography

K

Duplex ultrasonography

Extravasation/ Pseudoaneurysm/ Thrombosis/ Arteriovenous fistula

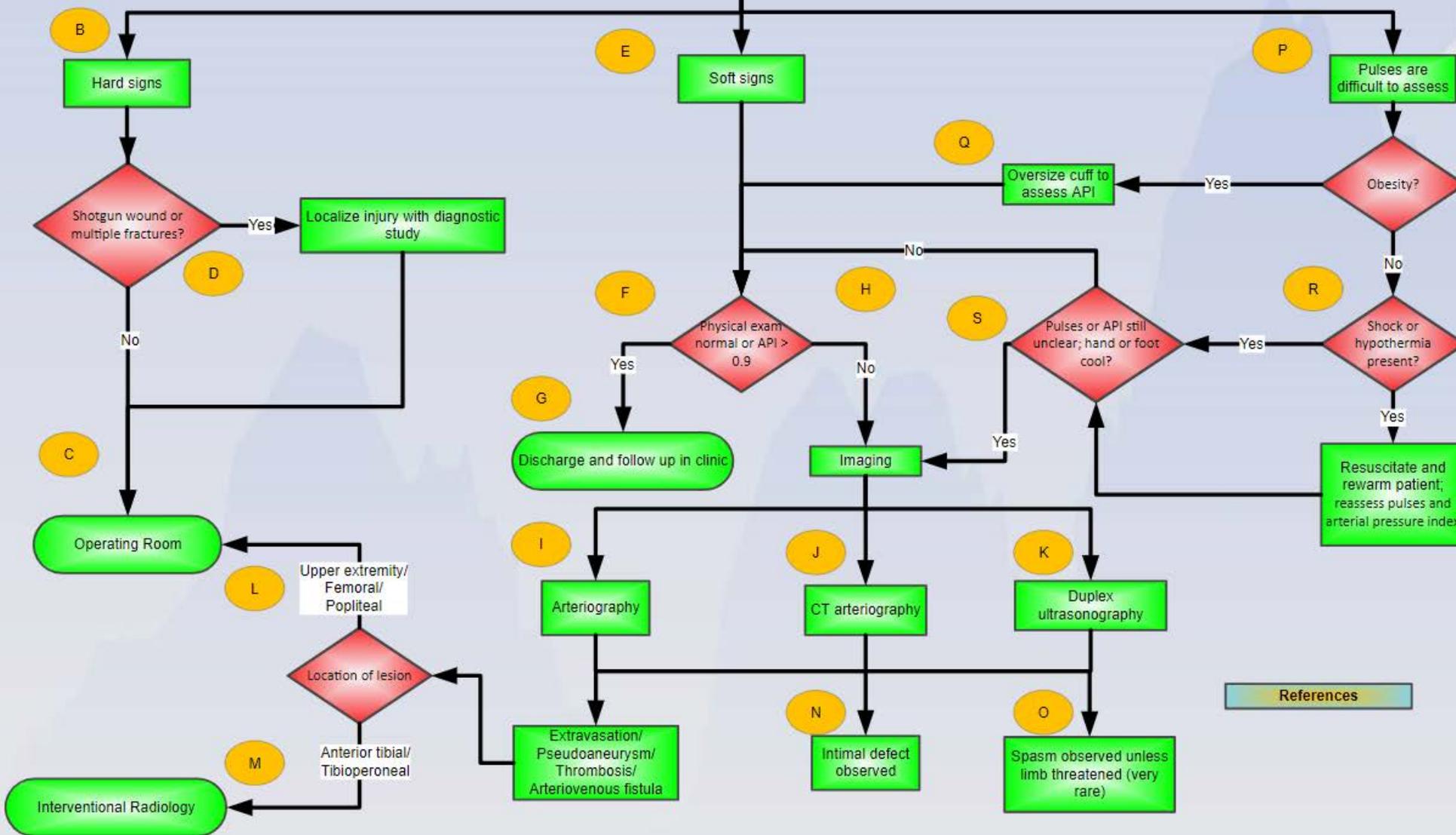
N

Intimal defect observed

O

Spasm observed unless limb threatened (very rare)

References



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