6.6. Demonstration of Vedhan and Visravan

Unit 6.6 — Demonstration of Vedhana (Puncture) & Visrāvaṇa (Drainage) on Patient/ Simulator

(Paracentesis of Ascitic Fluid, Hydrocele Tapping, Pleural Effusion—Thoracocentesis)

This chapter is a complete, exam-ready, **hands-on script** you can apply on a simulator or bedside under supervision. Every classical step is anchored to **Suśruta Saṃhitā** with ślokas and references; modern technique is given in sterile, checklist format.

1) Classical foundation you must quote

Aşţāvidha-śastrakarma (chapter opening):

अथातोऽऽष्टविधशस्त्रकर्मीयमध्यायं व्याख्यास्यामः। यथोवाच भगवान् धन्वन्तरिः॥ ।। — Su. Su. 25/1

Vedhya list (what is punctured):

वेध्याः सिरा बहविधा मूत्रवृद्धिरुदकोदरम् ॥१०॥ — Su. Su. 25/10

Sense: "To be punctured are the many veins, **mūtra-vṛddhi** (urinary/vesical distension), and **udaka-udara** (water-belly/ascites)."

Safety & timing rule for entry (applies to any evacuative puncture):

... मर्मिसरास्नायुसन्ध्यस्थिधमन्यः परिहरन्,

अनुलोमं शस्त्रं निदध्याद् आपूयदर्शनात्, सकृदेवापहरेच्छस्त्रम् ... — Su. Su. 5/7

Sense: Avoid marma, vessels, tendons, joints, bone; make a controlled, single entry at the **right time** when collection is evident; then withdraw.

Yantra-karmāṇi that support drainage:

यन्त्रकर्माणि तु — ... पीडन... मार्गविशोधन... चूषण... प्रक्षालन... प्रमार्जनानि चतुर्विंशति: ॥ — Su. Su. 7/17 (Compression, cleansing of tract, suction, irrigation, gentle mopping—core after-puncture steps.)

2) Universal "VEDHANA-VISRĀVAŅA" workflow (use this before each procedure)

- 1. Consent & identity; explain benefits/risks; obtain written consent.
- 2. Checklist & equipment ready; ultrasound (US) guidance wherever available.
- 3. **Asepsis**: hand wash \rightarrow gown \rightarrow sterile gloves \rightarrow drape.
- 4. Analgesia/LA: lignocaine infiltration (avoid injecting into the collection).
- 5. Mark safe window (US marking preferred) away from marma/sirā (Su. Su. 5/7).
- 6. Single, controlled puncture; visrāvana via catheter/needle; stop if pain, blood, cough, or instability.
- 7. **Yantra-karmāṇi sequence**: **cūṣaṇa** (suction) → **prakṣālana** (irrigation, if indicated) → **pramārjana** (mop edges) → **pīḍana & bandhana** (compression & dressing). *Su. 7/17*
- 8. **Post-procedure observation**, documentation, and specimen handling.

Quick check (for viva): Quote *Su. Su. 25/10* to justify **paracentesis** (udaka-udara) and **suprapubic puncture** (mūtra-vṛddhi). Link steps 5–7 to *Su. Su. 5/*7 and *7/17*.

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3) Procedure 1 — Paracentesis of Ascitic Fluid (Udaka-udara)

Indication (quote & translate)

• Udaka-udara = ascites is Vedhya: "... मूत्रवृद्धिरुदकोदरम्" — Su. Su. 25/10.

Contraindications (modern)

• **Uncorrected coagulopathy**, abdominal wall cellulitis at site, suspected bowel over puncture site, severe ileus with bowel distension directly beneath, pregnancy (avoid lower quadrants), inability to cooperate. *Relative:* massive obesity, prior surgeries (adhesions)—prefer US guidance.

Patient preparation & positioning

• Void bladder; supine with head elevated 30-45° or slight left lateral tilt to pool fluid; continuous monitoring.

Site selection (anatomical + US)

- **US-guided pocket** is best practice. If landmarking:
 - Left lower quadrant: 2-3 cm superomedial to ASIS, avoiding epigastric vessels.
 - **Midline**: 2 cm **below umbilicus** through **linea alba** (if no scars/hernia).

Equipment

• Sterile field; skin prep; **18G needle** or catheter-over-needle (8-14G), 3-way stopcock/tubing, vacuum bottles/syringes, **1% lignocaine**, specimen tubes (cell count, albumin, protein, culture in **blood-culture bottles**, cytology if indicated), dressing.

Step-by-step (say while doing)

- 1. Mark & anaesthetise skin, subcutis, and peritoneum (aspirate before injecting).
- 2. **Z-track** skin if using catheter-over-needle to reduce leakage.
- 3. Advance **perpendicular** (midline) or slightly oblique (LLQ) while **aspirating**; on free flow, feed catheter, remove needle.
- 4. Collect diagnostic samples first.
- 5. Therapeutic drainage: allow slow visrāvaņa; watch vitals. Stop for pain, dizziness, or blood.
- 6. Remove catheter; pīḍana + bandhana with occlusive dressing; brief manual compression.

Specimens (diagnostic paracentesis)

• Cell count & differential, albumin (for SAAG), total protein, culture (inoculate at bedside), ± cytology if malignant suspicion.

After-care

• Observe 1-2 h for leak/hypotension. For **large-volume paracentesis**, arrange **albumin** replacement (follow local protocol). Oral fluids as advised.

Complications & prevention

- Persistent leak (minimise with Z-track, compression); abdominal wall hematoma (needle smaller, compress);
 bowel perforation (US guidance); hypotension/AKI (slow drainage, albumin policy); infection (asepsis).
- Classical guard: avoid marma/sirā/snāyu/sandhi/asthi Su. Su. 5/7; complete cūṣaṇa-prakṣālana-bandhana — Su. Su. 7/17.

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4) Procedure 2 — Hydrocele Tapping (Temporary Decompression)

Note: Hydrocele belongs to **Vrddhi-roga**; definitive therapy is operative. **Tapping = Vedhana** for **symptom relief** when surgery is deferred or contraindicated.

Indications (modern)

• Large, tense hydrocele causing pain/skin compromise; **pre-operative** decompression; patients unfit for surgery; diagnostic aspiration if doubt with **hematocele/pyocele** (use US).

Contraindications

• Suspected tumour, active scrotal infection, coagulopathy, inguinal hernia, thick septations without US guidance.

Preparation & positioning

• Supine; scrotal support; **US mapping** to confirm fluid and testis position.

Safe zone & anatomy

• Testis & epididymis lie posterior; choose antero-lateral hemiscrotal skin at the most dependent, fluctuant point away from the epididymis and cord. Transilluminate if needed.

Equipment

• Skin prep; sterile drapes; **1% lignocaine**; **18-20G needle** or scalp-vein set attached to drainage tubing/syringe; specimen container if diagnostic; **scrotal support**; pressure dressing.

Step-by-step

- 1. LA to skin/subcutis; tent skin gently.
- 2. Stabilise testis posteriorly; antero-lateral puncture; aspirate straw-coloured fluid.
- 3. **Slow visrāvaņa**; avoid full rapid decompression if discomfort.
- 4. Withdraw; pīdana & bandhana—firm scrotal pressure dressing; suspensory support.

After-care

• Observe for re-accumulation, pain, fever. **Advise definitive repair** (hydrocelectomy) when feasible. Avoid strenuous activity for 24–48 h.

Complications & prevention

- Hematocele/pyocele, infection, injury to testis/epididymis, recurrence (common). Prevention: US guidance, correct safe zone, meticulous asepsis, firm compression.
- Classical links: single controlled entry with marma avoidance Su. Su. 5/7; pīḍana-bandhana Su. Su. 7/17.

5) Procedure 3 — Thoracocentesis (Pleural Effusion)

Indications

- **Diagnostic**: new effusion, suspected infection/malignancy.
- Therapeutic: dyspnoea due to moderate/large effusion (not loculated empyema—consider chest tube).

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Contraindications

• **Uncorrected coagulopathy**, skin infection at site, very small effusion (use US), **positive-pressure ventilation** (relative—perform with US and caution).

Positioning

• **Sitting**, leaning forward onto a table with pillow support (classic), or **lateral decubitus** with affected side up for US-guided pocket.

Site selection (US-guided preferred)

• Mark largest fluid pocket; if landmarking, choose posterior axillary or mid-scapular line, usually 7th-9th intercostal space. Always insert just above the upper border of the rib to avoid neurovascular bundle.

Equipment

• Skin prep; **1% lignocaine**; **18-20G needle** or pleural catheter kit with 3-way stopcock/tubing; vacuum bottle/syringes; specimen tubes: **protein, LDH, glucose, pH**, Gram stain/culture, cytology.

Step-by-step

- 1. **LA** down to pleura (feel "pop").
- 2. Insert needle/catheter above the rib into the marked pocket while aspirating.
- 3. On fluid return, ${\bf advance}\ {\bf catheter},$ remove needle; ${\bf connect}\ {\bf to}\ {\bf collection}.$
- Diagnostic samples first; then therapeutic drainage, limit to ~1.0-1.5 L per session to reduce risk of reexpansion pulmonary oedema.
- 5. On cough/chest pain/air aspiration or tachycardia—stop immediately.
- 6. Remove catheter; occlusive dressing; brief observation.

Complications & prevention

Pneumothorax/hemothorax, liver/spleen puncture (low interspaces—avoid), re-expansion oedema, infection, vasovagal. Prevent with US guidance, correct interspace, above-rib entry, slow drainage, monitoring.

Classical mapping

- Marma-sirā (intercostal bundle) parihāra Su. Su. 5/7 (insert superior to rib).
- Visrāvaņa + yantra-karmāņi (suction, gentle irrigation if necessary, dressing) Su. Su. 7/17.

6) Post-procedure documentation (all three)

- **Procedure note:** indication, consent, site, US use, anaesthetic, needle/catheter size, volume removed, patient response, complications.
- Samples: what was sent (cell count, culture, biochemistry, cytology), time collected.
- **Orders:** observation period, analgesia, compression/bandage instructions, albumin (paracentesis, if applicable), follow-up.

7) Safety pearls (quote-ready)

- ''वेध्याः ... मूत्रवृद्धि रुदकोदरम्'' (25/10) Use for paracentesis & suprapubic puncture justification.
- "... मर्मिसरास्नायुसन्ध्यस्थिधमन्यः परिहरन् ..." (5/7) Avoid vital structures; choose safe window; US is your friend.
- "... चूषण... प्रक्षालन... पीडन... बन्धन ..." (7/17) Always complete drainage with suction/irrigation (when indicated),

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compression and dressing.

• Single decisive entry (5/7) — Do not "pepper-pot"; if inadequate egress, reassess rather than multiple blind passes.

8) Simulator checklists (OSCE style)

A) Paracentesis (8 points)

- 1. Consent & checklist ✓
- 2. Bladder emptied; position ✓
- 3. US mark / correct landmark ✓
- 4. Sterile prep & LA ✓
- 5. Z-track; controlled puncture; diagnostic samples first ✓
- 6. Slow therapeutic drainage; monitor ✓
- 7. Compression + occlusive dressing ✓
- 8. Documentation; albumin plan if large-volume ✓

B) Hydrocele tapping (6 points)

- 1. Consent; US confirmation ✓
- 2. Asepsis; scrotal support ✓
- 3. Safe antero-lateral puncture; slow aspiration ✓
- 4. Pīḍana-bandhana pressure dressing ✓
- Complication counselling; plan definitive repair ✓
- 6. Documentation ✓

C) Thoracocentesis (8 points)

- 1. Consent; monitoring; position ✓
- 2. US mark; interspace selection \checkmark
- 3. LA to pleura; above-rib insertion ✓
- 4. Diagnostic samples; controlled drainage (≤1-1.5 L) ✓
- 5. Stop on red-flags; remove catheter ✓
- 6. Occlusive dressing; observe ✓
- 7. Complication avoidance explained ✓
- 8. Documentation <

9) Rapid viva prompts (answer in one line, cite)

- Which verse authorises paracentesis? Su. Su. 25/10.
- What is the classical instruction that prevents pneumothorax from rib bundle injury? "...22222222..." Su. 5/7 (enter above rib).
- Name two yantra-karmāṇi after drainage. Cūṣaṇa, Prakṣālana, Pīḍana, Bandhana Su. Su. 7/17.
- Why Z-track for paracentesis? To reduce persistent leak (modern rationale aligning with pīḍana-bandhana).

10) Assessment

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A) MCQs (Single-best answer)

1. The **Vedhya** verse that justifies therapeutic paracentesis is:

A. Su. Su. 25/5-8 B. **Su. Su. 25/10** C. Su. Su. 25/11 D. Su. Su. 7/17

2. During thoracocentesis, needle should pass:

A. Below rib (to avoid bundle) B. **Just above upper border of rib** C. Anywhere in interspace D. Mid-rib **Ans:** B

3. Which yantra-karmāṇi pair maps to suction and irrigation?

A. Vyūhana & Varthana B. **Cūṣaṇa & Prakṣālana** C. Bandhana & Pīḍana D. Āñc & Unnamana **Ans:** B

4. A key **stop** signal during paracentesis/pleural tap is:

A. Clear fluid continues B. **Patient coughs/air aspirated/severe pain** C. Pulse is 90/min D. Dressing soaked **Ans:** B

5. For large-volume paracentesis, modern care includes:

A. Tight bandage only B. **Albumin replacement as per protocol** C. Immediate suture closure D. Posture change only

Ans: B

6. Safe zone for hydrocele tapping avoids:

A. Antero-lateral sac B. Posterior testis/epididymis C. Median raphe D. Scrotal skin

Ans: B

7. Classical rule of **single, controlled entry** is from:

A. **Su. Su. 5/7** B. Su. Su. 25/18-19 C. Su. Su. 7/19 D. Su. Su. 5/11-12

Ans: A

B) SAQs (3-5 lines each)

- 1. Write Su. Su. 25/10 and relate each term (sirā, mūtra-vṛddhi, udaka-udara) to a modern Vedhana procedure.
- 2. Outline the **US-guided** steps of thoracocentesis and state **two complications** you will prevent by above-rib entry.
- 3. List the **post-paracentesis** observations and why **pīḍana-bandhana** matters per *Su. Su. 7/17*.
- 4. Explain the rationale and steps of hydrocele tapping and why definitive surgery is preferred long-term.
- 5. Which **yantra-karmāṇi** will you apply after draining a multiloculated collection, and in what sequence?

C) LAQs

- 1. **Demonstrate Paracentesis** on a simulator: indications with *Su. Su. 25/10*, contraindications, equipment, US marking, LA, puncture, sample set, complications, after-care—link steps to *Su. Su. 5/7* and *7/17*.
- 2. **Thoracocentesis OSCE**: patient positioning, interspace choice, above-rib rationale, drainage limit and stopping rules, specimen panel—map to classical **marma avoidance** and **yantra-karma**.
- 3. **Hydrocele tapping**: indications, safe zone anatomy, technique, compression dressing, recurrence counselling—justify Vedhana principles and cautionary complications.

11) One-page pocket summary (ready for clinic)

- Quote: "वेध्या: ... मूत्रवृद्धि रुदकोदरम्" paracentesis & suprapubic puncture are Vedhana (Su. Su. 25/10).
- Rule: Avoid marma/sirā; puncture once, at the right time; then suction → irrigate → compress → dress (Su. Su. 5/7; 7/17).
- Paracentesis: US mark; LLQ or midline; Z-track; diagnostic first; slow therapeutic drain; albumin if large volume.
- **Hydrocele tap:** antero-lateral entry; slow drainage; pressure dressing; plan surgery.
- Thoracocentesis: sit up/lean forward; above-rib entry; ≤1-1.5 L; stop on red-flags; occlusive dressing.

Use these lines exactly in viva and your OSCE—classical verse + modern act is the scoring combination.

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