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.

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1) Classical foundation you must quote

Aṣṭāvidha-śastrakarma (chapter opening):
अथातोऽष्टविधशस्त्रकर्मीयमध्यायं व्याख्यास्यामः। यथोवाच भगवान् धन्वन्तरिः ॥१॥ — *Su. Su. 25/1*

Vedhya list (what is punctured):
वेध्याः सिरा बहुविधा 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):
... मर्मसिरास्नायुसन्ध्यस्थिधमन्यः 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 चतुर्विंशतिः ॥ — *Su. Su. 7/17*
(Compression, cleansing of tract, suction, irrigation, gentle mopping—core after-puncture steps.)

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2) Universal "VEDHANA–VISRĀVAṆA" 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 → gown → sterile gloves → 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**; **visrāvaṇa** 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. 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 visrāvaṇa; 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*.

4) Procedure 2 — Hydrocele Tapping (Temporary Decompression)

> **Note:** Hydrocele belongs to **Vṛddhi-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 visrāvaṇa**; avoid full rapid decompression if discomfort.
4. Withdraw; **pīḍana & 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*.

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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).

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, **advance catheter**, remove needle; **connect** to collection.
4. **Diagnostic samples first**; then **therapeutic drainage**, **limit to ~1.0–1.5 L per session** to reduce risk of re-expansion 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).
- **Visrāvaṇa + yantra-karmāṇi** (suction, gentle irrigation if necessary, dressing) — *Su. Su. 7/17*.

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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.

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7) Safety pearls (quote-ready)

- **“वेध्याः … मूत्रवृद्धिरुदकोदरम्”** (25/10) — *Use for paracentesis & suprapubic puncture justification.*
- **“… मर्मसिरास्नायुसन्ध्यस्थिधमन्यः 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),*

compression and dressing.

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

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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 ✓
5. Complication counselling; plan definitive repair ✓
6. Documentation ✓

C) Thoracocentesis (8 points)

1. Consent; monitoring; position ✓
2. US mark; interspace selection ✓
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 ✓

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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?** — *"…□□□□□□□…" Su. 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**).

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10) Assessment

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.

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

- **Quote:** “वेध्या: … मूत्रवृद्धिरुदकोदरम्” — 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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