

6.4. Hands on training on Prathamopachara (First Aid)

Unit 6.4 — Prathamopacāra (First Aid) in Śastrakarma — Hands-on Training

This chapter is a complete, exam-ready guide to first aid in surgical (Śalya-Śāstrakarma) contexts. It integrates classical Ayurvedic principles and shlokas with modern life-saving algorithms and skills practice checklists.

1) What is Prathamopacāra and why it matters in Śalya-tantra

Prathamopacāra means the immediate, priority measures that preserve life, limb and function before (and alongside) definitive procedures. Suśruta repeatedly emphasises two foundations that directly guide first aid:

- 1. Protect the blood (rakta) -
 - देहस्य रुधिरं मूलं रुधिरेणैव धार्यते । तस्माद्यत्नेन संरक्ष्यं रक्तं जीव इति स्थितिः ॥ (Su. Su. 14/44)
 - "Blood is the root of the body; therefore, protect it with all effort."
 - → In first aid, this translates to rapid hemorrhage control and shock prevention.
- 2. Use appropriate instrument-actions (yantra-karmāṇi) for immediate care यन्त्रकर्माणि तु— निर्धातन-पूरण-बन्धन-व्यूहन-वर्तन-चालन-विवर्तन-विवरण-पीडन-मार्गविशोधन-विकर्षण-ाहरण-अञ्च-उन्नमन-विनमन-अञ्जन-उन्मथन-आचूषण-एषण-दारण-ऋजूकरण-प्रक्षालन-प्रधमन-प्रमार्जनानि चतुर्विंशतिः ॥ (Su. Su. 7/17)

 These include pīḍana (compression), bandhana (bandaging), mārga-viśodhana (cleansing), āchūṣaṇa (suction), prakṣālana (irrigation), pramārjana (mopping)—all core first-aid acts.

2) Universal First Aid Algorithm (BLS-compatible)

Scene → Safety → Shout for help → Gloves → Primary Survey (A-B-C-D-E)

Step	What you do (clinic / field)	Classical alignment
A - Airway & C-spine	Head-tilt/chin-lift (if no trauma) or jaw-thrust; suction oral blood/vomit; cervical support	Āchūṣaṇa (suction), Pramārjana (mopping) (Su. Su. 7/17)
B - Breathing	Look-listen-feel; high-flow O_2 if available; treat open chest wound with 3-sided dressing	Bandhana principle to temporize chest wall breaches
C - Circulation (bleeding)	Direct pressure → pressure bandage → hemostatic gauze → tourniquet (limb) → urgent transfer	Rakta-stambhana upāyas (below); pīḍana and bandhana
D - Disability	AVPU/Glasgow; glucose if trained; protect from seizures	_
E - Exposure/Environment	Full exposure for hidden bleeding; prevent hypothermia	Rakṣā of patient and rakta

CPR trigger: unresponsive + not breathing normally → **start chest compressions** (as per latest BLS you are trained in), apply **AED** if available.

3) Hemorrhage control (core of Prathamopacāra)

Suśruta gives a four-step hemostatic ladder:

चतुर्विधं यदेतद्धि रुधिरस्य निवारणम् ।

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सन्धानं स्कन्दनं चैव पाचनं दहनं तथा ॥ (Su. Su. 14/39)

व्रणं कषायः संधत्ते रक्तं स्कन्दयते हिमम् ।

तथा संपाचयेद् भस्म दाहः संकोचयेत् सिराः ॥ (Su. Su. 14/40)

अस्कन्दमाने रुधिरे संधानानि प्रयोजयेत् । संधाने भ्रश्यमाने तु पाचनैः समुपाचरेत् ॥

... असिद्धिमत्सु चैतेषु दाह: परम इष्यते ॥ (Su. Su. 14/41-42)

Clinical translation (with modern correlation):

Suśruta method	First-aid act	Examples
Skandana (promote clotting by cold)	Cold application when appropriate	Cold compress/ice around oozing capillary bleeds (avoid frostbite).
Sandhāna (approximate / constrict)	Direct pressure, pressure bandage, packing; ligation when qualified	Firm hand pressure → stack gauze → elastic wrap; figure-of-eight for scalp; wound edge approximation with steri-strips in first aid.
Pācana (caustic/ash to "digest" ooze)	Hemostatic agents (clinically: oxidized cellulose/kaolin gauze)	Use approved hemostatic dressings per protocol.
Dāhana (cautery; last resort)	Thermal/chemical cautery in OT settings by trained surgeon	Not a field skill; reserve for controlled settings.

WHERE CLASSICAL WISDOM MEETS INTELLIGENT LEARNING

At point of care (limb hemorrhage):

- 1. Gloves → expose wound → wipe and pack deep bleeds (gauze down to source).
- 2. **Direct pressure 3-5 min uninterrupted** → pressure bandage.
- 3. Tourniquet 5-7 cm proximal to wound if life-threatening limb bleed; note time; do not cover tourniquet.
- 4. **Prevent hypothermia**, start rapid transport.

Dietetic support during/after bleeding (Suśruta's supportive care):

धातुक्षयात् स्त्रुते रक्ते ... तं नानिशीतैर्लघुभिः स्निग्धैः शोनितवर्धनैः ... भोजनेः समुपाचरेत् ॥ (Su. Su. 14/37-38)

 \rightarrow Light, unctuous, blood-forming foods/fluids (once safe to give), avoiding extremes of cold.

4) Wounds: cleansing, dressing, and bandaging

4.1 Cleansing & field preparation

Under yantra-karma, Suśruta explicitly lists mārga-viśodhana (cleansing the tract), prakṣālana (irrigation), pramārjana (mopping) (Su. Su. 7/17).

Practice: copious irrigation with clean water or normal saline; remove gross contaminants; avoid aggressive tissue scrubbing.

4.2 Bandaging - patterns, tightness, when/where

Fourteen classical bandage patterns (Bandha-viśeşa):

तत्र कोश-दाम-स्वस्तिक-अनुवेल्लित-मुटोली-मण्डल-स्थगिक-यमक-खट्वा-चीन-विबन्ध-वितान-गोफणा-पञ्चाङ्गी चेति चतुर्दश बन्धविशेषाः ॥ (Su. Su. 18/17)

Typical placements (abridged from Su. Su. 18/18):

- Svastika for joints, palms/soles, between brows/breasts, ears.
- Anuvellita for limbs; Mandala for round parts; Khāṭvā for jaw/temples/cheeks; Vitāna for scalp; Gophaṇā for chin, nose, lips, shoulders, bladder; Pañcāṅgī for regions above the clavicle. (Su. Su. 18/18)

Tightness (tri-vidha bandha):

... गाढः, समः, शिथिल इति ॥ पीडयन्न् रुजो गाढः ; सोच्छवासः शिथिलः स्मृतः । नैव गाढो न शिथिलो बन्धः प्रकीर्तितः ॥ (Su. Su. 18/22-23)

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- Gāḍha (tight) for buttocks, axillae, groin, thighs, head;
- Sama (moderate) for face, ears, neck, penis/scrotum, back, flanks, abdomen, chest;
- Sithila (loose) for eyes and bony joints. (Su. Su. 18/24)

If you bandage wrongly (pitfalls):

- Tight where it should be moderate/loose → pain, edema, loss of medicine action.
- Loose where it should be tight/moderate → medicine falls off, wound-edge friction. (Su. Su. 18/27)

Benefits of correct bandaging:

चूर्णितं मथितं भग्नं विश्लिष्टं अतिपातितम् । अस्थि-स्नायु-सिरा-च्छिन्नम् आशु बन्धेन रोहति ॥

सुसम् एवं व्रणी शेते गच्छति तिष्ठति ... क्षिप्रं संरोहति व्रणः ॥ (Su. Su. 18/30-31)

→ Proper bandage aids fractures, dislocations, tendon/vein injuries and hastens healing.

When *not* to bandage (exam favourite):

Wounds dominated by pitta/rakta, injury/poison with edema, burning, vivid redness, pain, alkali/fire burns, sloughing muscle, kuṣṭha, madhu-meha pīḍakā, karnikā, guda-pāka, etc. (Su. Su. 18/32-35)

Bandage practice pearls (skills):

- Choose pattern by site/shape; ensure yantraṇa (knots/support) above/below/sides (Su. Su. 18/19).
- Keep knots off the wound; check distal perfusion after limb bandage.

5) Fractures & dislocations: immediate immobilisation (splinting)

Even within the bandage chapter, Suśruta reminds us that proper bandaging supports **bhagna** (**fracture**) and **viślisshta** (**dislocation/tearing**):

... भग्रं ... अस्थि-स्नायु-सिरा-च्छिन्नम् आशु बन्धेन रोहति ॥ (Su. Su. 18/30)

Field steps:

- 1. Inspect (look/feel gently; avoid pain-provoking movement).
- 2. Immobilise joints above and below using rigid splints (sticks/cardboard) + padding → bandhana.
- 3. **Open fracture:** control bleeding → sterile dressing → splint → urgent transfer.
- 4. Neurovascular check before & after: capillary refill, distal pulses, sensation, motor.
- 5. **Do not attempt reduction** in field (unless trained and limb ischemia).

6) Burns (Dagdha-vrana): first aid

Immediate first aid (modern):

- Cool the burn with cool running water 20 minutes, ideally within 3 h; do not use ice, ghee/oils, or paste in the first minutes.
- Remove rings/tight items; cover with sterile non-adherent dressing; analgesia; assess for smoke inhalation.
- Chemical/electrical burns: special precautions; brush off dry chemicals; irrigate copiously (unless contraindicated).

Ayurvedic linkage: Burns fall in the domain of **pitta/rakta vitiation**; in the **bandhana contraindication** list, fresh **alkali/fire burns** are not bandaged tight (Su. Su. 18/32–33). Definitive **dagdha-vraṇa** care and ghṛta-based ropana are instituted *after* acute stabilization, in a controlled setting.

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7) Common first-aid scenarios in Sastrakarma OPD / casualty

Scenario	What you do now	Classical anchors
Scalp laceration with heavy bleeding	Pressure with stacked gauze → mandala/svastika bandage; consider hemostatic gauze; avoid blind clamping	Sandhāna-Skandana (Su. Su. 14/39-42); bandha-viśeṣa (Su. Su. 18/17-18)
Epistaxis (nosebleed)	Sit forward, pinch soft nose 10–15 min; ice over bridge; pack if trained; look for shock $$	Skandana (cold), Sandhāna (pressure)
Penetrating limb wound	Do not remove deep impaled object; stabilise with bulky dressings; control bleeding; tourniquet if needed	Aharana postponed; Bandhana/Pīdana (Su. Su. 7/17)
Open fracture (tibia)	Sterile cover, pack bleeding, splint above & below, no reduction , early transport	Bandhana aids bhagna (Su. Su. 18/30-31)
Eye foreign body	Shield (no pressure), do not remove embedded object; urgent ophthalmic referral	Gentle pramārjana only if superficial and trained
Amputation	Control stump bleeding (pack/pressure \rightarrow tourniquet if life-threatening); wrap part in moist gauze \rightarrow bag \rightarrow on ice (not direct)	Sandhāna/Pīdana → Bandhana

8) Bandaging patterns you must practise (skills lab)

- Svastika around knee/ankle; Mandala for scalp; Gophanā for chin/lip; Pañcāngī for head/shoulder region. (Su. Su. 18/17-18)
- Tightness decisions using Gāḍha/Sama/Śithila with site selection (Su. Su. 18/22-24).
- Yantra-karma maneuvers: pīḍana (firm, even pressure), mārga-viśodhana (irrigation technique), āchūṣaṇa (safe suction), prakṣālana/pramārjana (gentle wound toilet). (Su. Su. 7/17)

9) Hands-on checklists (print & keep)

A. Primary Survey (ABCDE) - pocket card

- 1. A: Open airway; suction as needed; jaw-thrust if trauma; C-spine in line.
- 2. **B**: Look-listen-feel; give O₂; seal open chest wounds.
- 3. **C**: Glove → expose → **direct pressure** → **pressure bandage** → **hemostatic** → **tourniquet** (note time).
- 4. **D**: AVPU/GCS; check pupils; glucose if indicated.
- 5. **E**: Full exposure; warm the patient.

B. Life-threatening limb bleed

- Pack deep wound → continuous pressure 3-5 min → pressure wrap → tourniquet if needed.
- Reassess every 2-3 min; do not remove initial packing that has soaked—stack more.

C. Limb splinting

Pad bony prominences → immobilise joint above & below → secure with bandage → distal pulse/sensation check
 → document.

D. Burns

 Cool water 20 min → remove jewelry → cover → analgesia → assess TBSA (Rule of 9s/palmar method) → refer per severity.

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10) OSCE-style practice: apply Suśruta to modern kit

Task 1: Apply a Svastika bandage to a bleeding ankle sprain site

• Select width; two strips crossing at centre; maintain **sama** tightness; check distal perfusion. *Cite: (Su. Su. 18/17-18, 22-24)*

Task 2: Control a deep forearm laceration

• Glove → **sandhāna** by firm pressure → pack → pressure bandage; if oozing persists, escalate per ladder; document vitals. *Cite*: (Su. Su. 14/39-42)

Task 3: Demonstrate mārga-viśodhana and prakṣālana

• Irrigate with saline using 20–35 ml syringe + splash guard; avoid high-pressure jet on delicate tissue; mop edges. Cite: (Su. Su. 7/17)

11) Safety, documentation, and referral

- Red flags for urgent transfer: uncontrolled bleeding after tourniquet, signs of shock (cool clammy skin, tachycardia, hypotension), suspected skull/chest/abdominal injury, major burns, open fractures, vascular compromise.
- **Record:** injury time, mechanism, interventions (pressure/tourniquet time), vitals, allergies, tetanus status, consent if possible.
- Ethics: act within training; do not attempt invasive procedures beyond scope in first aid.

12) Quick revision (mnemonics)

- Bleeding ladder (Suśruta): S-S-P-D → Skandana Sandhāna Pācana Dāhana (Su. Su. 14/39-42)
- Bandage choice: "Sva-Anu-Man-Gho-Pan" (Svastika, Anuvellita, Mandala, Gophaṇā, Pañcāṅgī) to recall common patterns (Su. Su. 18/17-18).
- Tightness: "G-S-Ś" (Gāḍha, Sama, Śithila) with Eyes & joints = Śithila (Su. Su. 18/24).
- Yantra-karmāṇi to remember first-aid acts: Pi-Ba-Vi-Pr → Pīḍana, Bandhana, Viśodhana (mārga-), Prakṣālana (Su. Su. 7/17).

Assessment

A) MCQs (mark one; answers after the set)

- 1. According to Suśruta, which is the **last resort** in the hemorrhage-control sequence?
 - a) Skandana b) Sandhāna c) Pācana d) Dāhana
- 2. Svastika bandha is most appropriate for:
 - a) Abdomen b) Palms and joints c) Scalp d) Chin and lips
- 3. **Śithila bandha** is preferred over the eye and bony joints because:
 - a) It prevents medicine loss b) It reduces friction c) It avoids pressure damage d) It speeds healing
- 4. The yantra-karma that corresponds to **wound irrigation** is:
 - a) Pramārjana b) Prakṣālana c) Āchūṣaṇa d) Vyūhana
- 5. The shloka 'देहस्य रुधिरं मूलं ..." emphasises first aid priority to:

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- a) Protect prāṇa-vāyu b) Protect rakta c) Restore agni d) Calm manas
- 6. **Gophaṇā** bandha is indicated for:
 - a) Scalp b) Jaw/temple c) Chin/nose/lips d) Palms/soles
- 7. For a life-threatening limb bleed, the correct sequence is:
 - a) Tourniquet → packing → direct pressure
 - b) Direct pressure → pressure bandage → hemostatic → tourniquet
 - c) Hemostatic → tourniquet → pressure bandage
 - d) Pressure bandage → remove clots → tourniquet
- 8. Which is **not** a suitable indication for bandaging per Suśruta?
 - a) Alkali burn b) Clean laceration c) Dislocation support d) Post-pack scalp wound
- 9. The **tri-vidha bandha** refers to:
 - a) Three layers of dressing b) Three degrees of tightness c) Three shapes of bandages d) Three times per day

- 10. In splinting an open tibial fracture, which is **incorrect**?
 - a) Cover wound with sterile dressing b) Flush superficial debris c) Attempt reduction in field d) Immobilise joints above/below

Answers: 1-d; 2-b; 3-c; 4-b; 5-b; 6-c; 7-b; 8-a; 9-b; 10-c.

B) Short-answer questions (4-5 lines each)

- 1. Explain Skandana-Sandhāna-Pācana-Dāhana with one first-aid example for each. (Su. Su. 14/39-42)
- 2. List five bandha-viśeşa and one typical anatomical site for each. (Su. Su. 18/17-18)
- 3. Define tri-vidha bandha and state where **Śithila** bandha is preferred. (Su. Su. 18/22-24)
- 4. Enumerate four yantra-karmāṇi directly useful in first aid and map them to modern steps. (Su. Su. 7/17)
- 5. Write the shloka that underscores the importance of protecting **rakta** and explain its first-aid implication. (Su. Su. 14/44)

C) OSCE Stations (checklists for examiners)

Station 1 — Pressure bandage for active forearm bleed (3 min)

 Hand hygiene, gloves → expose → stack gauze & continuous pressure → elastic wrap sama tight → check distal perfusion → document time & vitals.

Station 2 — Splinting mid-shaft forearm fracture (3 min)

• Reassure \rightarrow check NVI \rightarrow pad \rightarrow splint from elbow to wrist \rightarrow secure without compressing \rightarrow re-check NVI \rightarrow sling.

Station 3 — Svastika bandage at ankle (3 min)

Two strips crossing at centre; each turn overlays the last by half; knot away from bony prominence; demonstrate
 Gāḍha vs Sama judgement.

Shloka citations used (for your notes)

- Hemostasis ladder & priority of rakta: (Su. Su. 14/39-42, 44)
- Yantra-karmāṇi (first-aid acts): (Su. Su. 7/17)
- Bandha-viśeṣa, placements, tightness, pitfalls, benefits, contraindications: (Su. Su. 18/17-19, 22-24, 27, 29-35, 30-31)

Practice tip: Before viva, recite "चतुर्विधं ... संधानं स्कन्दनं ... पाचनं दहनं..." (Su. Su. 14/39-42) and "तत्र

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कोश-दाम-स्वस्तिक ... पञ्चाङ्गी..." (Su. Su. 18/17) from memory; then explain one modern first-aid act under each. This neatly bridges classical doctrine with current emergency care.

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