

## 6.4. Hands on training on Prathamopachara (First Aid)

### Unit 6.4 — Prathamopacāra (First Aid) in Śāstrakarma — 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 रुधिरैव 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— निर्घातन—पूरण—बन्धन—व्यूहन—वर्तन—चालन—विवर्तन—विवरण—पीडन—मार्गविशोधन—विकर्षण—आहरण—अञ्च—उन्मनन—विनमन—भञ्जन—उन्मथन—आचूषण—एषण—दारण—ऋजूकरण—प्रक्षालन—प्रधमन—प्रमार्जनानि चतुर्विंशतिः ॥ (Su. Su. 7/17)

These include **piḍana** (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
<b>A - Airway &amp; C-spine</b>	Head-tilt/chin-lift (if no trauma) or jaw-thrust; suction oral blood/vomit; cervical support	<b>Āchūṣaṇa</b> (suction), <b>Pramārjana</b> (mopping) (Su. Su. 7/17)
<b>B - Breathing</b>	Look-listen-feel; high-flow O <sub>2</sub> if available; treat open chest wound with 3-sided dressing	<b>Bandhana</b> principle to temporize chest wall breaches
<b>C - Circulation (bleeding)</b>	Direct pressure → pressure bandage → hemostatic gauze → tourniquet (limb) → urgent transfer	<b>Rakta-stambhana upāyas</b> (below); <b>piḍana</b> and <b>bandhana</b>
<b>D - Disability</b>	AVPU/Glasgow; glucose if trained; protect from seizures	—
<b>E - Exposure/Environment</b>	Full exposure for hidden bleeding; prevent hypothermia	<b>Rakṣā</b> 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 ।



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 रुधिरं संधानानि प्रयोजयेत् ।  
संधाने भ्रश्यमाने तु पाचनैः समुपाचरेत् ॥  
... असिद्धिमत्सु चैतेषु दाहः परम इष्यते ॥ (Su. Su. 14/41-42)

#### Clinical translation (with modern correlation):

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

#### 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 शोणितवर्धनैः ... भोजनेः समुपाचरेत् ॥ (Su. Su. 14/37-38)  
→ 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), **prakṣālaṇa** (irrigation), **pramāṛjana** (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-viśeṣa):

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 ॥ पीडयन् रुजो गाढः ; सोच्छ्वासः शिथिलः स्मृतः । नैव गाढो न शिथिलो बन्धः प्रकीर्तितः ॥ (Su. Su. 18/22-23)

- **Gāḍha (tight)** for buttocks, axillae, groin, thighs, head;
- **Sama (moderate)** for face, ears, neck, penis/scrotum, back, flanks, abdomen, chest;
- **Śīthila (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 विशिष्टं अतिपातितम् ।

अस्थि-स्नायु-सिरा-च्छिन्नम् आशु बन्धेन रोहति ॥

सुखम् 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 **viślishta (dislocation/tearing)**:

... भग्नं ... 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-vraṇa): 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.

## 7) Common first-aid scenarios in Śāstrakarma OPD / casualty

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

## 8) Bandaging patterns you must practise (skills lab)

- **Svastika** around knee/ankle; **Mandala** for scalp; **Gophaṇā** for chin/lip; **Pañcāṅgī** for head/shoulder region. (Su. Su. 18/17-18)
- **Tightness decisions** using **Gāḍha/Sama/Sīthila** with site selection (Su. Su. 18/22-24).
- **Yantra-karma maneuvers**: **pīdana** (firm, even pressure), **mārga-vīśodhana** (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 O<sub>2</sub>; 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.

## 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 prakṣāḷana

- 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-), Prakṣāḷana** (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) Pramāṛjana b) Prakṣāḷana c) Āchūṣaṇa d) Vyūhana
5. The shloka "देहस्य रुधिरं मूलं ..." emphasises first aid priority to:

- 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-viśeṣa** 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 → check NVI → pad → splint from elbow to wrist → secure without compressing → re-check NVI → 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



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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