

## 2. Ansaphalaka Bhagna (Scapula Fracture), Akshakasthi Bhagna (Clavicle Fracture)

# Fracture of the Shoulder Girdle: A Comprehensive Overview of Ansaphalaka Bhagna (Scapula Fracture) and Akshakasthi Bhagna (Clavicle Fracture)

In the realm of Shalya Tantra, the management of fractures (Bhagna) holds a significant position. This section delves into two crucial fractures of the shoulder region: Ansaphalaka Bhagna (Scapula Fracture) and Akshakasthi Bhagna (Clavicle Fracture). A thorough understanding of their clinical presentation, diagnostic methods, potential complications, and diverse management strategies, encompassing both ancient Ayurvedic wisdom and modern orthopedic principles, is paramount for a budding BAMS professional.

### Ansaphalaka Bhagna (Scapula Fracture)

The Ansaphalaka, or scapula, is a large, triangular flat bone that plays a vital role in the stability and movement of the shoulder. Fractures of the scapula are relatively uncommon due to its protected position and surrounding musculature. They are often the result of significant trauma.

#### Clinical Features (Lakshanas)

The clinical presentation of Ansaphalaka Bhagna can be a blend of general fracture signs and specific indicators related to the scapula's location and function.

#### Ayurvedic Perspective:

Acharya Sushruta has described the general signs and symptoms of Bhagna, which are applicable here:

- **Teevra Vedana (Severe Pain):** Intense pain localized to the back of the shoulder, aggravated by any attempt to move the arm.
- **Shotha (Swelling):** Significant swelling over the scapular region.
- **Vivarnata (Discoloration):** Bruising or ecchymosis may appear over the affected area.
- **Sparsha Asahishnutva (Tenderness):** The area is extremely tender to touch.
- **Kriya Hani (Loss of Function):** Inability to lift the arm or perform shoulder movements.
- **Aakriti Vikriti (Deformity):** While not always obvious, a subtle deformity or flattening of the back of the shoulder may be present.
- **Shabda (Crepitus):** A grating sound or sensation may be felt or heard on palpation over the fracture site.

#### Modern Perspective:

Modern orthopedics corroborates these findings and further elaborates:

- **Localized Pain:** Intense pain over the body, spine, acromion, or glenoid of the scapula.
- **Swelling and Ecchymosis:** Prominent swelling and bruising are common.
- **Limited Range of Motion:** Painful and restricted movement of the shoulder joint is a key feature. The patient often holds the affected arm close to the body.
- **Palpable Deformity:** A palpable gap or step-off may be felt along the borders of the scapula in displaced fractures.
- **Associated Injuries:** Due to the high-energy nature of the trauma, it is crucial to look for associated injuries to the ribs, lungs (pneumothorax), brachial plexus, and major blood vessels.

#### Diagnosis (Nidana)

A systematic approach is essential to accurately diagnose Ansaphalaka Bhagna and rule out other injuries.

#### Ayurvedic Perspective:

The diagnosis in Ayurveda is primarily based on:

- **Trividha Pariksha (Three-fold Examination):**

- **Darshana (Inspection):** Observing for swelling, discoloration, and any visible deformity.
- **Sparshana (Palpation):** Gently palpating for tenderness, crepitus, and temperature changes. The examination must be done with utmost care to avoid causing further pain or displacement.
- **Prashna (Interrogation):** A detailed history of the injury (Abhighata), including the mechanism and intensity of trauma.

**Modern Perspective:**

Modern diagnostic tools provide a more detailed and precise assessment:

- **Physical Examination:** A thorough physical examination to assess the extent of injury, neurovascular status of the upper limb, and to check for associated injuries.

- **Radiological Investigations:**

- **X-rays:** Anteroposterior (AP), lateral, and axillary views of the shoulder are standard. A specific "scapular Y-view" can be particularly helpful in visualizing the body and processes of the scapula.
- **Computed Tomography (CT) Scan:** A CT scan is often recommended for complex fractures, especially those involving the glenoid (the socket of the shoulder joint), to get a detailed three-dimensional understanding of the fracture pattern and to plan for surgery if required.

**Complications (Upadrava)**

While uncomplicated scapular fractures often heal well, several potential complications can arise.

**Ayurvedic Perspective:**

Ayurvedic texts describe complications that can result from improper management or the severity of the initial injury:

- **Sandhi Shotha (Joint Swelling and Stiffness):** Chronic swelling and stiffness of the shoulder joint.
- **Kriya Nasa (Loss of Function):** Persistent inability to use the shoulder effectively.
- **Vata Prakopa:** Aggravation of Vata dosha leading to chronic pain and neurological symptoms.

**Modern Perspective:**

Modern medicine categorizes complications as early or late:

- **Early Complications:**

- **Associated Injuries:** As mentioned earlier, injuries to the lungs, ribs, and neurovascular structures are the most immediate and serious concerns.
- **Floating Shoulder:** A rare but severe injury where there is a fracture of the scapular neck and the clavicle on the same side, leading to instability of the entire shoulder girdle.

- **Late Complications:**

- **Malunion:** The fracture heals in a displaced or angulated position, which can lead to chronic pain, weakness, and altered shoulder mechanics.
- **Non-union:** The fracture fails to heal, which is rare for scapular fractures.
- **Adhesive Capsulitis (Frozen Shoulder):** Prolonged immobilization can lead to stiffness and restricted movement of the shoulder joint.
- **Post-traumatic Arthritis:** Fractures involving the glenoid surface can damage the cartilage and lead to arthritis in the long term.
- **Scapulothoracic Dyskinesis:** Abnormal movement of the scapula against the chest wall, leading to pain and dysfunction.

**Management (Chikitsa)**

The management of Ansaphalaka Bhagna aims to achieve fracture union, restore function, and prevent complications.

### Ayurvedic Perspective (Bhagna Chikitsa):

The principles of Bhagna Chikitsa as described by Acharya Sushruta are applied:

- **Aamavastha (Acute Stage):**

- **Sthirikaran (Immobilization):** The primary step is to immobilize the limb to relieve pain and prevent further displacement. A sling and swathe bandage (kavala bandha) can be used.
- **Shotha Hara Chikitsa (Management of Swelling):** Application of cold compresses (sheeta lepa) with herbs like sandalwood (Chandana) and vetiver (Usheera) can help reduce swelling.
- **Vedana Sthapana (Pain Management):** Analgesic herbs like Guggulu and Nirgundi can be used internally.

- **Pachymanavastha (Sub-acute and Chronic Stage):**

- **Sandhana Karma (Promoting Fracture Healing):** Internal administration of medicines that promote bone healing (Asthi Sandhanakara) is crucial. Formulations like Laksha Guggulu, Abha Guggulu, and Gandha Tailam are beneficial. A diet rich in calcium, phosphorus, and protein is advised.
- **Abhyanga and Swedana (Oleation and Fomentation):** Gentle massage with medicated oils like Dhanwantaram Tailam followed by mild fomentation helps in reducing stiffness and improving circulation once the initial inflammation subsides.
- **Punarvasana (Rehabilitation):** Gradual and gentle mobilization of the shoulder joint should be started as soon as pain permits to prevent stiffness. Specific exercises (vyayama) are prescribed to regain strength and range of motion.

### Modern Perspective:

The management approach in modern orthopedics is largely conservative, with surgery reserved for specific indications.

- **Conservative Management:** This is the mainstay of treatment for most scapular fractures, especially those that are minimally displaced.

- **Immobilization:** A sling is used for comfort and to support the weight of the arm for 2 to 4 weeks.
- **Pain Management:** Analgesics and anti-inflammatory medications are prescribed.
- **Early Mobilization:** Early and gentle range of motion exercises for the shoulder are encouraged as soon as pain allows to prevent stiffness. This is a key principle to avoid a frozen shoulder.

- **Surgical Management:** Surgery is considered for:

- Significantly displaced fractures of the glenoid (intra-articular fractures).
- Fractures of the scapular neck with significant angulation or displacement.
- Acromion or coracoid process fractures that cause impingement or instability.
- "Floating shoulder" injuries.
- Open fractures.
- The surgical procedure involves open reduction and internal fixation (ORIF) using plates and screws to stabilize the fracture fragments.

### Akshakasthi Bhagna (Clavicle Fracture)

The Akshakasthi, or clavicle (collarbone), is a long, slender bone that connects the sternum to the scapula. It is one of the most commonly fractured bones in the body, particularly in children and young adults.

#### Clinical Features (Lakshanas)

The subcutaneous location of the clavicle makes the signs of fracture quite evident.

### Ayurvedic Perspective:

The Lakshanas are consistent with the general principles of Bhagna:

- **Spashta Vedana (Obvious Pain):** Sharp pain over the clavicle, which worsens with any movement of the arm or shoulder.
- **Shotha and Vivarnata:** Swelling and bruising are typically present over the fracture site.
- **Aakriti Vikriti (Deformity):** A visible or palpable bump or deformity is a classic sign. The shoulder on the affected

side may appear to droop downwards and forwards.

- **Sparsha Asahishnutva:** The area is very tender to palpation.
- **Kriya Hani:** The patient is unable to lift the arm above the shoulder level due to pain.
- **Shabda (Crepitus):** A grating sensation may be felt when the arm is moved.

#### **Modern Perspective:**

Modern descriptions align with the Ayurvedic observations:

- **Pain and Tenderness:** Localized pain and tenderness directly over the clavicle.
- **Deformity:** A visible sagging of the shoulder and a prominent bump at the fracture site are characteristic. The medial fragment is often pulled upwards by the sternocleidomastoid muscle, while the lateral fragment is pulled downwards by the weight of the arm.
- **Swelling and Ecchymosis:** These are common findings.
- **Limited Arm Movement:** The patient typically supports the elbow of the injured side with the opposite hand to relieve the downward pull on the fracture.

#### **Diagnosis (Nidana)**

The diagnosis of a clavicle fracture is usually straightforward.

#### **Ayurvedic Perspective:**

The Trividha Pariksha is employed:

- **Darshana:** Observing the characteristic deformity and swelling.
- **Sparshana:** Gentle palpation to confirm the site of tenderness and the presence of a bony irregularity.
- **Prashna:** Eliciting a history of a fall onto the shoulder or an outstretched hand, or a direct blow to the clavicle.

#### **Modern Perspective:**

- **Physical Examination:** A thorough examination confirms the clinical signs and assesses the neurovascular status of the arm. It is important to check for any skin tenting or open wounds over the fracture, which would indicate a more severe injury.
- **Radiological Investigations:**
  - **X-ray:** An anteroposterior (AP) view of the clavicle is usually sufficient to confirm the diagnosis, determine the location (medial, middle, or lateral third), and assess the degree of displacement and comminution. Sometimes, an angled (cephalic tilt) view is taken for better visualization of the fracture.

#### **Complications (Upadhrava)**

While most clavicle fractures heal without issues, certain complications can occur.

#### **Ayurvedic Perspective:**

- **Sandhi Hani:** If the fracture involves the ends of the clavicle, it can affect the function of the acromioclavicular or sternoclavicular joints.
- **Vataja Vedana:** Persistent pain due to Vata aggravation.
- **Kurupata (Deformity):** Healing with a visible bump is a common aesthetic concern.

#### **Modern Perspective:**

- **Early Complications:**
  - **Neurovascular Injury:** Injury to the subclavian artery and vein, or the brachial plexus, is rare but serious and can occur with severely displaced fractures.
  - **Pneumothorax:** A sharp fracture fragment can puncture the lung.
  - **Skin Compromise:** The sharp end of a bone fragment can pierce the skin (open fracture) or put pressure on it, leading to skin necrosis.

- **Late Complications:**

- **Malunion:** The fracture heals in a shortened or angulated position. While often well-tolerated, significant malunion can lead to cosmetic deformity, pain, and functional limitations.
- **Non-union:** The fracture fails to heal. This is more common in displaced fractures, especially those in the middle third.
- **Post-traumatic Arthritis:** Fractures extending into the acromioclavicular or sternoclavicular joints can lead to arthritis.
- **Symptomatic Hardware:** If surgery is performed, the plate and screws can sometimes be prominent under the skin and cause irritation.

### Management (Chikitsa)

The goal of treatment is to achieve a solid union of the fracture, restore normal shoulder function, and minimize deformity.

#### Ayurvedic Perspective (Bhagna Chikitsa):

The management follows the principles of Bhagna Chikitsa:

- **Sthirikaran (Immobilization):**

- **Figure-of-Eight Bandage (Patta Bandha):** This was a traditional method to pull the shoulders back and reduce the fracture. However, it can be uncomfortable and is less commonly used now.
- **Sling and Swathe:** A simple sling to support the arm is often sufficient and more comfortable.

- **Lepana (External Applications):** Pastes of herbs with bone-healing properties (Asthisandhaniya Dravyas) like the bark of Arjuna and shell of pearl oyster (Mukta Shukti) can be applied.

- **Abhyantara Snehapana (Internal Oleation):** Medicated ghees like Gandha Tailam or Pravala Panchamrita can be given internally to promote healing.

- **Aahara (Diet):** A diet rich in milk, ghee, and foods that pacify Vata is recommended.

- **Punarvasana (Rehabilitation):** Gentle pendulum exercises for the shoulder can be started early. Gradual progression to active exercises is essential to regain full range of motion and strength.

#### Modern Perspective:

The treatment for clavicle fractures has evolved, with a greater role for surgery in certain cases.

- **Conservative Management:** This is the most common treatment, especially for minimally displaced fractures of the middle third and most fractures in children.

- **Immobilization:** A simple sling for 3 to 6 weeks is the preferred method. The figure-of-eight bandage is now used less frequently due to issues with comfort and complications like axillary nerve palsy.
- **Pain Control:** Analgesics are prescribed.
- **Rehabilitation:** Early pendulum exercises are started, followed by a structured physical therapy program to restore shoulder function.

- **Surgical Management:** Surgery (ORIF with a plate and screws) is now more commonly recommended for:

- Open fractures.
- Associated neurovascular injury.
- Significant displacement or shortening of the clavicle (typically more than 2 cm).
- Fractures of the distal third of the clavicle with ligamentous disruption (leading to an unstable shoulder).
- Non-union.
- "Floating shoulder" injuries.
- The decision for surgery is also influenced by the patient's age, activity level, and functional demands.

By integrating the timeless principles of Ayurveda with the precision of modern orthopedics, a BAMS graduate will be well-equipped to provide comprehensive and effective care for patients with Ansaphalaka and Akshakasthi Bhagna.