Nerve Palsies - Erb's Palsy (Waiter's tip)

Erb Palsy occurs when the cervical nerve roots of the upper trunk (C5-C6) of the brachial plexus are damaged, leading to a functional deficit in the muscles that allow the upper limb to abduct, externally rotate, flex, and supinate. The affected upper limb is medially rotated, extended, pronated, and hangs by the patient’s side in adduction; this positioning of the hand is dubbed a “waiter’s tip” because it is likened to a waiter subtly accepting a tip.



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Nerves

C5-C6 Roots
Cat (5) Hand to Cat (6) Sax
These nerve roots originate in the brachial plexus and come together to supply the upper trunk. They contribute to the musculocutaneous, axillary, median, and radial nerves.

Superior (Upper) Trunk
Upper Trunk of tree
Erb’s Palsy results from nerve damage to the superior (upper) trunk of the brachial plexus, which consists of the C5 and C6 cervical spinal nerve roots. Affected nerves include the axillary nerve, suprascapular nerve, and the musculocutaneous nerve.

Causes

Lateral Traction on Neck during Delivery
Ladder bending Neck during Delivery
Traumatic lateral traction on the neck may occur during childbirth can lead to upper trunk damage. Pulling the shoulders during delivery, especially during a breech presentation, shoulder dystocia, clavicular fractures, macrosomic infants, and the use of forceps increase a patient’s risk for upper trunk injuries during birth.

Trauma in Adults
Adult with Trauma-spike
Adults may develop Erb’s Palsy if they experience direct trauma, such as a gunshot wound, to the upper trunk or through injuries that cause severe stretching of the upper trunk and/or brachial plexus.

Functional Deficit

Deltoid
Doll-toad
This muscle originates at the acromion and inserts at the deltoid tuberosity of the humerus. It is innervated by the axillary nerve and supplied by the posterior circumflex humeral artery. It aids in upper limb abduction, flexion, internal rotation, and external rotation.

Infraspinatus
Infrared-spine-ape
This muscle originates at the infraspinous fossa of the scapula and inserts at the greater tubercle of the humerus. It is innervated by the suprascapular nerve (C4-C6) and supplied by the circumflex scapular artery and the suprascapular artery. The infraspinatus aids in external rotation of the arm. If the infraspinatus is damaged, patients present with an internally rotated arm, as they are unable to fully externally rotate their upper limb.

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Biceps Brachii

Bicycle-biceps

This muscle originates at the supraglenoid tubercle of the scapula and inserts at the radial tuberosity. It is innervated by the musculocutaneous nerve and supplied by the brachial artery. It functions in flexing at the elbow joint, supination, abduction, and internal rotation of the humerus.

Presentation

Waiter's Tip Deformity

Waiter's Tip Gesture

This refers to the common presentation of the limb and hand resembling a waiter receiving a tip. The arm will be medially rotated, extended, pronated, hanging by the patient’s side in adduction.

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