

---

---

---

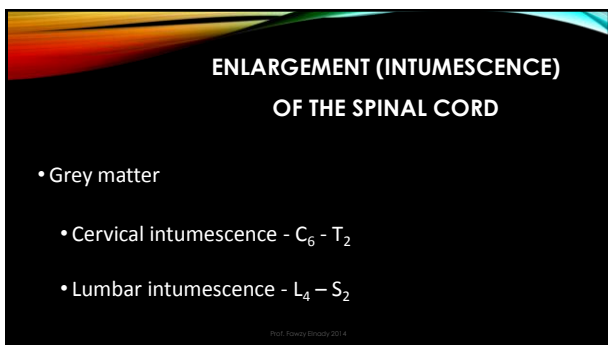
---

---

---

---

---



- Grey matter
  - Cervical intumescence - C<sub>6</sub> - T<sub>2</sub>
  - Lumbar intumescence - L<sub>4</sub> - S<sub>2</sub>

---

---

---

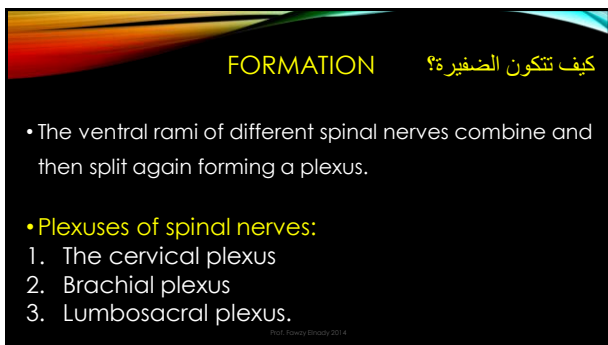
---

---

---

---

---



- The ventral rami of different spinal nerves combine and then split again forming a plexus.
- **Plexuses of spinal nerves:**
  1. The cervical plexus
  2. Brachial plexus
  3. Lumbosacral plexus.

---

---

---

---

---

---

---

---

# BRACHIAL PLEXUS

**Def.**  
Network of nerves supplying sensory and motor innervation to most structures of forelimb.

---

---

---

---

---

---

---

# BRACHIAL PLEXUS

**Formation**  
**Roots:** ventral branches of last three cervical and first two thoracic spinal nerves.  
**Derivatives:** the plexus is located cr to first rib & pierces the scalenus M. ...> 11 main branches.

---

---

---

---

---

---

---

# Brachial plexus damage



---

---

---


---

---

---

---

### AVULSION قلع OF THE BRACHIAL PLEXUS



Spinal cord, cervical intumescence, ventral view. Hemorrhagic remnants of left C7, C8 and T1 root sleeves contrasting with normal roots on the opposite side. Complete intradural avulsion of dorsal and ventral roots. Due to traction during excessive abduction of left fore leg. 4 day survival. Dog.

Prof. Fawzy Elmagdy 2014

---

---

---

---

---


---

---

---

### SUPRASCAPULAR NERVE

- **Type:** mixed sensory and motor.
- **Origin:** C6,7
- **Course :**
- **Damage:** "Sweeny"



Prof. Fawzy Elmagdy 2014

---

---

---

---

---

---

---

---



Prof. Fawzy Elmagdy 2014

---

---

---

---

---


---

---

---

## SUPRASCAPULAR NERVE PARALYSIS

- Suprascapular nerve paralysis in a 7-month-old foal.
- The foal had been found markedly lame in the paddock 6 weeks previously.
- Pronounced lateral subluxation of the shoulder was evident on clinical examination.
- The foal was box rested for 4 months and then was turned out in a small paddock for a further 2 months before rejoining her herd mates.



Prof. Fawcay Erredey 2014

---

---

---

---

---

---

---

---

2. Subscapular n. .... Subscapularis
3. Long thoracic n. .... serratus ventralis thoracis
4. Pectoral nn. (cr. and ca.)
5. Thoraco dorsal n. .... Latissimus dorsi
6. Lateral thoracic n. .... Cutaneous trunci m

- Lateral thoracic n. + intercostal nn = intercostobrachial n.  
..... sensory to skin over scapula and triceps brachii m

Prof. Fawcay Erredey 2014

---

---

---

---

---

---

---

---

### 7. Axillary n.

**Origin:** C6,7,8

**Course:** Enters between subscapularis and teres major mm.

**Branches and distribution:**

**Sensory :** Cr cutaneous brachial  
                    Cr. cutaneous antebrachial

**Motor to:** flexors of shoulder + ca part of brachiocephalicus

---

---

---

---

---

---

---

---

## 8. MUSCULOCUTANEOUS NERVE

- **Origin:** C7,8
- **Course:** runs parallel to median n. forming a loop (ansa axillaris)
- **Branches:**
- **Cutaneous (Sensory)** .... Medial cutaneous antebrachial n. > skin on medial aspect of forearm and manus up to fetlock].
- **Motor:**
  - Proximal muscular br ..... Coracobrachialis and biceps brachii
  - Distal muscular br. .... to brachialis

Prof. Pawley Emmsley 2014

---

---

---

---

---

---

---

---

## 9. RADIAL NERVE



- The radial nerve is the key n. of thoracic limb
- It is responsible for advancing the leg as the horse steps forward.

---

---

---

---

---

---

---

---

## RADIAL NERVE

- **Origin:** C7,8 + T1, 2 (the largest n. of brachial plexus)
- **Course:**
  1. Passes between teres major, long and lateral heads of triceps brachii
  2. Gains the musculospiral groove of the humerus
- **Branches and distribution:**
  - **Motor:** to all extensors of forelimb (except shoulder)
  - **Sensory:** innervates skin of lateral aspect
    1. Caudal lateral cutaneous brachial n.
    2. Lateral cutaneous antebrachial n.

Prof. Pawley Emmsley 2014

---

---

---

---

---

---

---

---

### RADIAL NERVE PARALYSIS



Fig. 8-7 Example of adequate padding.

---

---

---

---

---

---

---

---

### RADIAL NERVE PARALYSIS



Prof. Fouady Khayat 2014

---

---

---

---

---

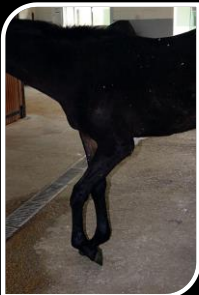
---

---

---

### RADIAL NERVE PARALYSIS

Radial nerve paralysis in a foal secondary to a fracture of the humerus or first rib.



Prof. Fouady Khayat 2014

---

---

---

---

---

---

---

---

### RADIAL NERVE PARALYSIS

	High RNP	Low RNP
<b>Site of damage</b>	1. Proximal to middle of arm (triceps brachii innervation site)	1. Distal to triceps innervation site.
<b>Signs</b>	1. the horse has a dropped elbow (can not extend elbow). 2. cannot advance or bear weight on the leg.	1. The horse stumbles and knuckles over. 2. Has a noticeable limp رجو but able to bear weight on toe.

Prof. Fawzy Elshady 2014

---

---

---

---

---

---

---

---

### ULNAR NERVE

- **Origin:** T1, 2
- **Course:**
  1. Runs distally caudal to brachial A. > elbow
  2. Descends between flexor carpi ulnaris and ulnaris lateralis
  3. Proximal to accessory carpal bone it divides into **Dorsal branch & palmar branch**
  4. The palmar br. Divides into: **Superficial & deep branches**
  5. The deep br. > suspensory lig.
  6. Superficial br. > join the lateral palmar of median n.

Prof. Fawzy Elshady 2014

---

---

---

---

---

---

---

---

### ULNAR NERVE BRANCHES

In the forearm	In the manus
<b>Sensory</b>	
1. Ca. cutaneous antebrachial n. to skin of ca aspect of forearm.	Dorsal branch to skin of dorsolateral aspect of manus up to fetlock.
<b>Motor</b>	
1. Flexor carpi ulnaris 2. S.D.F 3. Ulnar head of DDF	The palmar br. Divides into: a. Deep br. > suspensory lig. b. Superficial br. .... Joins the lateral palmar br. of median n.

Prof. Fawzy Elshady 2014

---

---

---

---

---

---

---

---

## MEDIAN NERVE

- **Origin:** C8 and T1, 2
- **Course:** the longest n. of the brachial plexus.
  1. Ansa axillaris with musculocutaneous n. for Axillary artery.
  2. Descends with the median A.
  3. Proximal to carpus divides into medial and lateral palmar nerves.
  4. The superficial br. of the palmar br. of the ulnar n. joins the lateral palmar of median
  5. Both medial palmar and lateral palmar nerves pass in the carpal canal.
  6. Run on edges of flexor tendons.
  7. Cross fetlock to digit as medial and lateral palmar **digital** nerves.

Prof. Fowdy © 2004

---

---

---

---

---

---

---

---

## MEDIAN NERVE BRANCHES

**In the forearm:**

**Sensory:** Ca. cutaneous antebrachial n. to skin of ca aspect of forearm.

**Motor:** Flexor carpi radialis & D.D.F. (except ulnar head)

**In the Manus: (medial palmar and lateral palmar nerves)**

1. **Medial palmar n.**
  - a. Cutaneous branches to the skin on medial aspect of metacarpus
  - b. Communication br. Joins the lateral palmar n.                      C. Articular br. to fetlock j.
  - It divides above fetlock into **dorsal br.** And **medial palmar digital n.**

The **dorsal br.** > skin on dorsum of digit & corium of hoof.

The **medial palmar digital n.** > skin on palmar aspect of digit, digital joints, digital cushion and corium of hoof.
2. **Lateral palmar digital n.** Gives medial and lateral metacarpal nerves.

---

---

---

---

---

---

---

---