CHORDATA –CHARACTERISTIC FEATURES AND BASIC CLASSIFICATION

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Animals belonging to phylum Chordata are fundamentally characterised by the presence of a **notochord**, a **dorsal hollow nerve cord** and **paired pharyngeal [**relating to the pharynx**] gill slits**.

- They are **bilaterally symmetrical, triploblastic, coelomate** with **organ-system level** of organisation.
- Phylum Chordata is divided into three subphyla: **Urochordata** or Tunicata, **Cephalochordata** and **Vertebrata**.
- Subphyla Urochordata and Cephalochordata are often referred to as protochordates and are exclusively **marine**.
- In Urochordata, notochord is present only in **larval tail**, while in Cephalochordata, it extends from head to tail region and is persistent throughout their life.
- Examples: Urochordata – Ascidia, Salpa, Doliolum; Cephalochordata – Amphioxus or Lancelet.

Comparison of Chordates and Non-chordates

S.No.	Chordates	Non-chordates
1.	Notochord present.	Notochord absent.
2.	Central nervous system is dorsal, hollow and single.	Central nervous system is ventral, solid and double.
3.	Pharynx perforated by gill slits.	Gill slits are absent.
4.	Heart is ventral.	Heart is dorsal (if present).
5.	A post-anal part (tail) is present.	Post-anal tail is absent.

VERTEBRATA

- These animals have a **true vertebral column** and **internal skeleton**, allowing a completely different distribution of muscle attachment points to be used for movement.
- The members of subphylum Vertebrata possess **notochord** during the **embryonic period**.
- The notochord is replaced by a **cartilaginous or bony vertebral column** in the adult.
- Thus all vertebrates are chordates but all chordates are not vertebrates.
- Besides the basic chordate characters, vertebrates have a ventral muscular heart with two, three or four chambers, kidneys for excretion and osmoregulation and paired appendages which may be fins or limbs.
- Vertebrates are **bilaterally symmetrical, triploblastic, coelomic** and **segmented**, with complex differentiation of body tissues and organs.

The subphylum Vertebrata is further divided as follows: