DETORSION DI (S/G)

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Changes occurring in torsion are to a certain extent reversible. This reversion is known as detorsion and it is very characteristic of the whole group of the Euthyneura. As a result, pallial complex travels back towards the posterior end along the right side, ctenidia point backwards, auricles move behind the ventricle, and the visceral loop becomes untwisted and symmetrical. In this way, a secondary external symmetry is re-established Torsion must be disadvantageous to adult snails, as many of them have undergone detorsion processes. Various degrees of detorsion are met within the Euthyneura. In the least specialized opisthobranchia and pulmonata (Acteon, Bulla etc). detorsion is not complete, so that be visceral loop remains partly twisted and the anus and ctenidium are directed laterally, instead of anteriorly. Formerly, this condition was looked upon as an arrested stage in the torsion, but there is the same reduction of the paired parts of the pallial complex as in the specialized Streptoneura. Total detorsion, as shown by the

typical opisthobranchia (Aplysia), is accompanied by a reduction or disappearance of the shell. In extreme cases, as in petrobranchea, the mantle and the visceral sac also disappear and the body elongates to become worm-like. The mantle cavity, visceral hump, external shell and even ctenidia may be lost, as in Nudibranchia (Eolis, Doris etc.)

The phenomenon of detorsion can thus be elaborated as follows:

1. In some cases the right ctenidium (originally left) and the osphradium are absent.
2. In Eolis, there is veliger larva with a coiled visceral hump that undergoes torsion but adults do not show any torsion and the pallial complex is posteriorly placed in adult. Naturally the detorsion must have occurred during the course of further development.
3. In pulmonata, the ~~parapet~~ pallial complex is shifted but there is no chiastoneury as a result of shortening of visceral commissures. The

Neuroriscoral mass and so the chiastoneury is secondarily lost. Fig:-

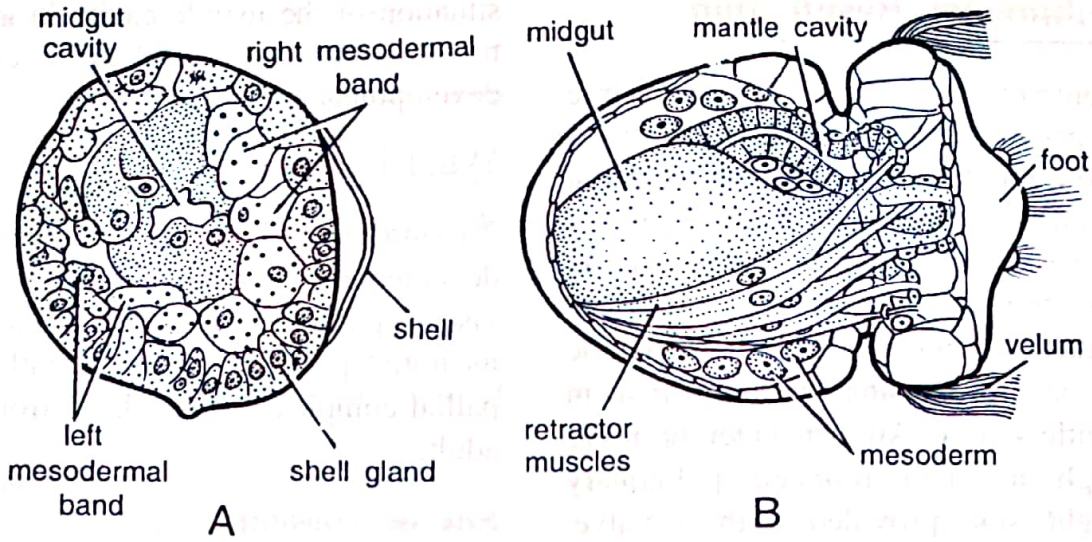

Fig. 12. Mechanism of torsion. **A.** T.S. early veliger *of Haliotis* showing disproportionate growth of right mesodermal cells. **B.** 48 hour larva of *Patella vulgata* showing a symmetrical retractor muscle.

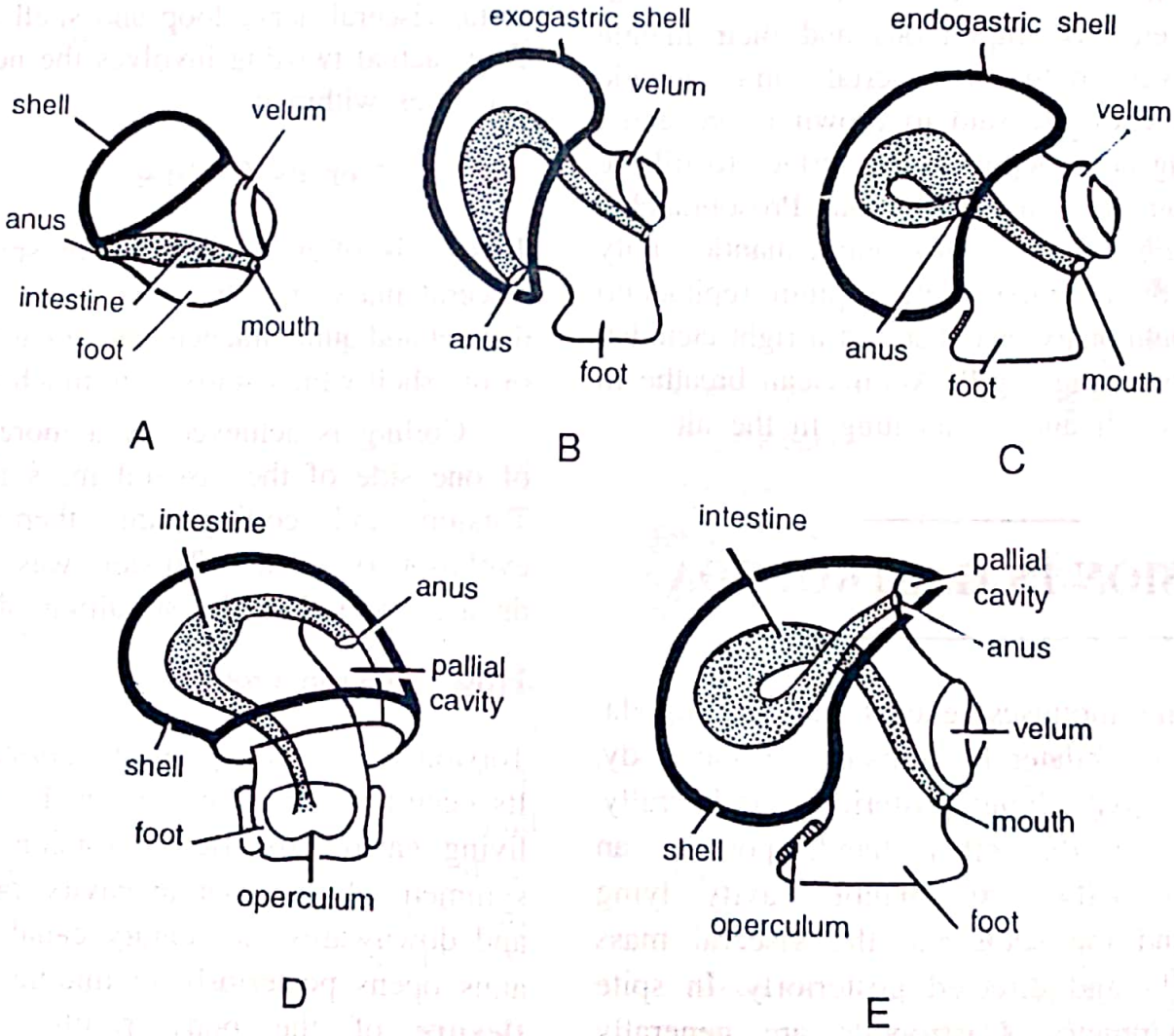

Fig. 13. Five successive stages in the development of a gastropod to show occurrence of torsion. **A.** Early veliger larva or pretorsional stage in lateral view. **B.** Larva with ventral flexure and an exogastric shell in lateral view. **C.** Stage showing 90° of lateral anticlockwise torsion. Shell becomes endogastric. Mantle cavity and anus move on to right side. **D.** 90° torsion stage in posterior view. **E.** Adult stage with complete or 180° torsion in lateral view.