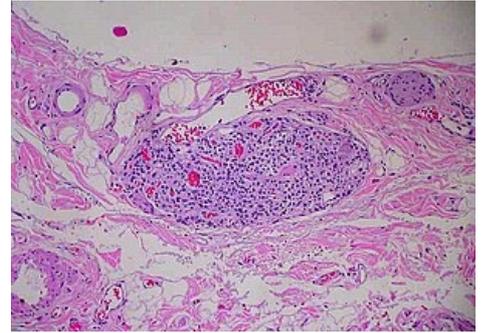


# Paraganglia

**Paraganglia** are *clusters of endocrine cells* (similar to medulla cells), that are scattered in the interstitial ligament around large vessels, autonomic nerves, and near sympathetic ganglia. They originate from the neuroectoderm. Paraganglia belong to the sympathetic nervous system because they produce catecholamines (adrenaline, noradrenaline, dopamine). Divided into:

1. chromaffin (stains chrome brown - pheochromocytes)
2. no chromaffin reaction

Microscopically, they are made up of **pheochromocytes** (principal cells containing granules with catecholamines), **supporting cells** (corresponding to Schwann or satellite cells of peripheral nerve ganglia) and **fibrous stroma**.



## Chromaffin paraganglia

- they correspond to the adrenal medulla (which is actually a paired paraganglioma covered by a cortex of mesoderm origin, pheochromocytes represent modified sympathetic postganglionic neurons (they do not have axons), which release catecholamines upon stimulation (release of acetylcholine from the endings of preganglionic sympathetic cells)
- after birth, they are gradually reduced
- in newborns, they occur along the carotids, around the arch of the aorta and pulmonary arteries, around the pericardium, in the retroperitoneum around the descending aorta and its branches, the largest of which is the paraganglion aorticum abdominale (**Zuckerkandl's organ**) - a paired body with a diameter of 1-2 cm located at a distance inferior mesenteric artery.

## Paraganglia without chromaffin reaction

- the most important of them is the glomus caroticum, a body located in the division of the common carotid in the a. carotis interna and externa - the vascular supply is provided by branches from the a. carotis externa, innervation (sensitive) then by the r. sinus carotici (sinus nerve) n. glossopharyngei and n. vagus, performs the function of a chemoreceptor that detects the content of CO<sub>2</sub> and O<sub>2</sub> in the blood (in contrast to the high-pressure baroreceptor, which is located in the carotid sinus)
- other similar paraganglia without a chromaffin reaction are in the ligament between the aorta and the truncus pulmonalis (paraganglia aorticopulmonalia) and at the gap of the sinistra coronary artery

### Note:

- chemoreceptors
  1. central - in the medulla oblongata
  2. peripheral - carotid (n. IX) and aortic (n. X) bodies
- baroreceptors
  1. high pressure - in the carotid sinus, arcus aortae, vas afferens
  2. low pressure - in the atria of the heart

## Links

### Related Articles

- Truncus sympathicus

### Source

- PASTOR, Jan. *Langenbeck's medical web page* [online]. [cit. 2009]. <<https://langenbeck.webs.com/>>.