



Al-Mustaqbal University
College of Science
Forensic Evidence Department
Second Stage



جامعة المستقبل
AL MUSTAQBAL UNIVERSITY

كلية العلوم قسم الادلة الجنائية

Lecture (6)

عنوان المحاضرة

(Nervous Tissue)

المادة : انسجه عملي .

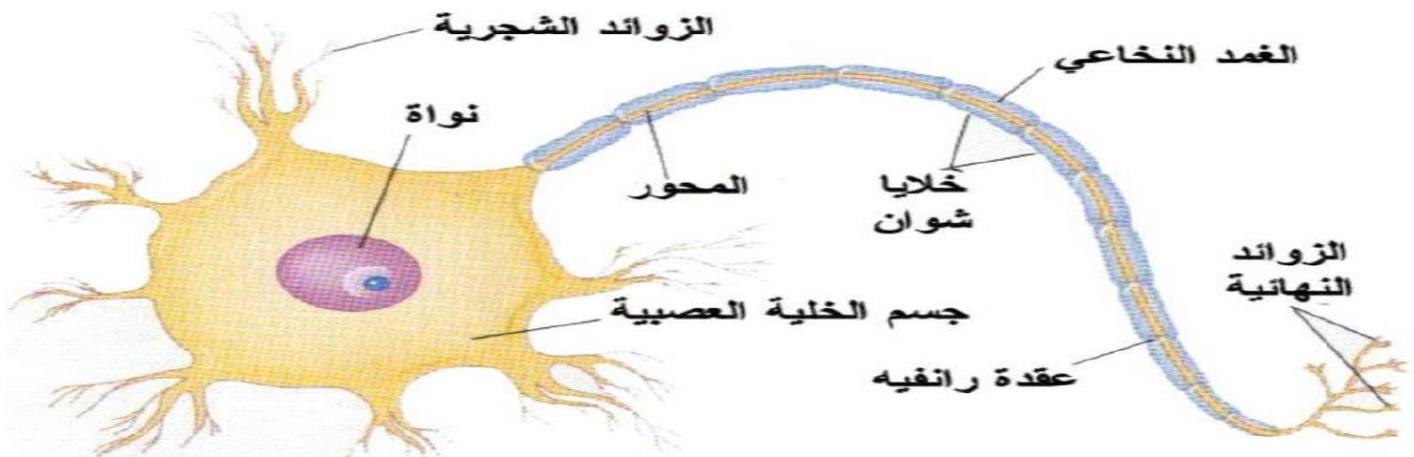
المرحلة : الثانية

اسم الاستاذ:م.م بشرى حسين عطي



Nervous tissue:

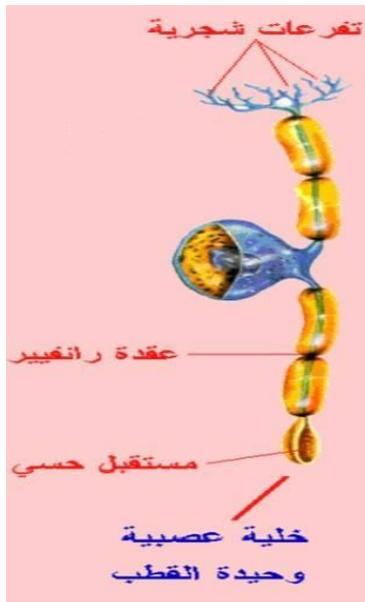
Nerve cell



It is Classified according to the number of prominece to :

1. Unipolar neuron:

This cell type has one protoplasmic protrusion, the axon. This type is found in the embryonic stages of development and in some low animals.



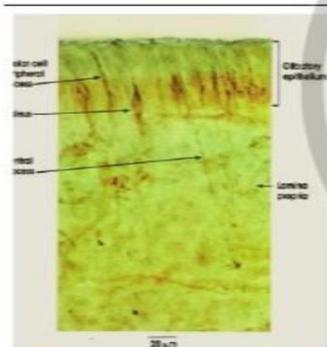


2-Bipolar Neuron:

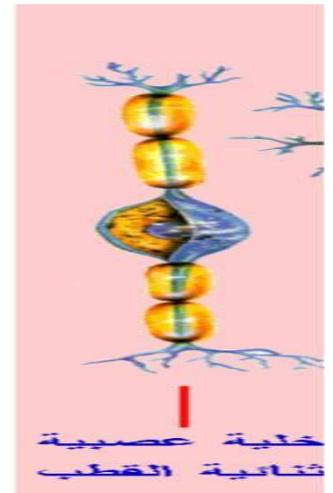
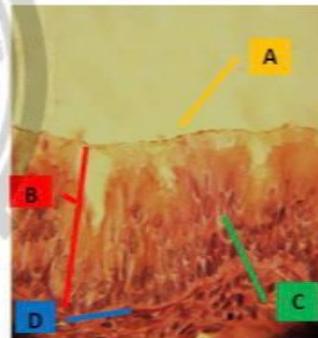
We note that after taking a retina section or olfactory epithelium we find that the cell body has two prominences inside, one representing the axon axis and the other a dendritic protrusion towards the free surface of the tissue called dendrite.

(2) Bipolar neuron:

العصبونة ثنائية القطب:
Found in Olfactory epithelium: ويوجد في الظهارة الشمية:



A- Surface of the tissue
سطح النسيج
B- Olfactory epithelium
الظهارة الشمية
C- Bipolar neuron
العصبونة ثنائية القطب
D- Basement membrane
العشاء القاعدي

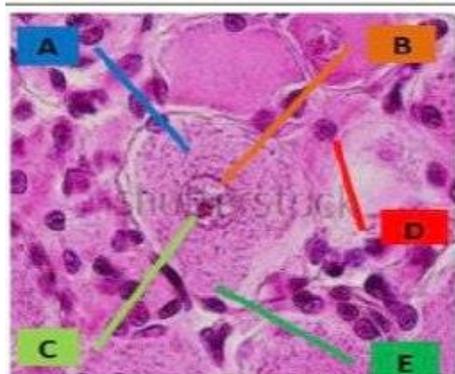


3-Pseudounipolar neuron:

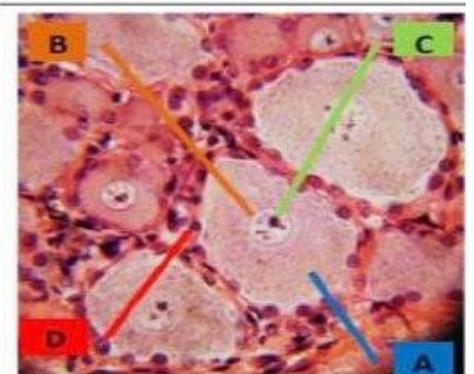
Note when taking a section in the Spinal ganglion. This cell has a round body with a clear middle nucleus and has one large protrusion that then branches off into two axons, one axon and the other is dendrite.

(3) Pseudo unipolar neuron:

العصبونة أحادية القطب الكاذب:
Found in spinal ganglion: ويوجد في العقدة الشوكية:



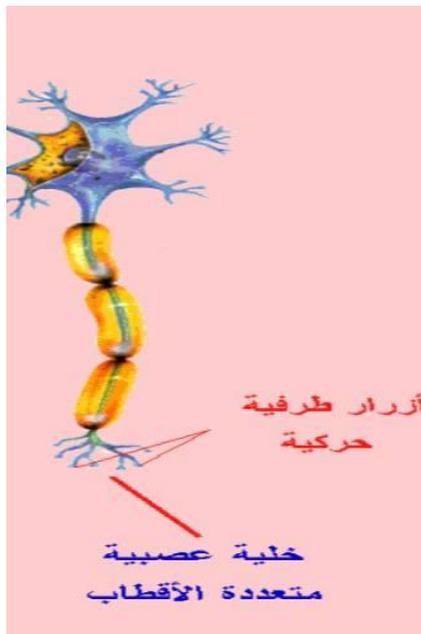
A- Pseudounipolar neuron
العصبونة أحادية القطب الكاذب
B- Nucleus of neuron
نواة العصبونة
C- Nucleolus of neuron
نوية العصبونة
D- Capsular or Satellite cell
الخلية المحفظية أو النجمية
E- Axon hillock
رقبة المحور





4-Multipolar neuron:

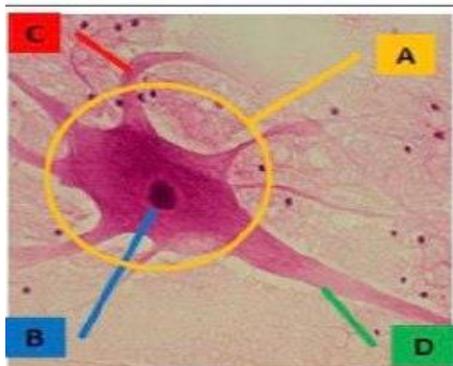
This cell has a large body from which a large number of protrusions arise and the longest of these protrusions is the axis. The cell body takes forms including astral and pyramidal. The cell body contains a large nucleus. When these cells are pigmented with basal amyloid pigmentation, Nissl bodies can be observed, which appear as patches spread in the cell body's cytoplasm, while the axis is free of these bodies. These cells are found in the gray matter of spinal cord.



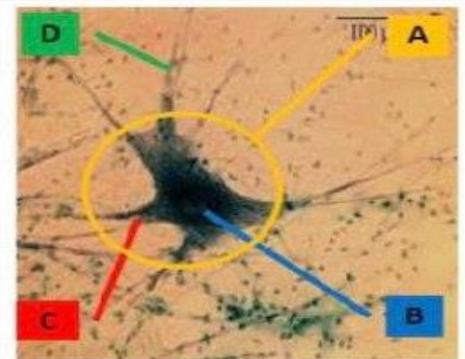
(3) Multipolar neuron:

(3) العصبونة متعددة الأقطاب:

Found in gray matter of spinal cord: ويوجد في المادة السنجابية للحبل الشوكي:



- A- Multipolar neuron
العصبونة متعددة القطبية
- B- Nucleus of neuron
نواة العصبونة
- C- Dendrites
التشجرات
- D- Axon
المحور





Nerve fibers

1. Myelinated nerve fibers:

When examining myelin-sheathed nerve fibers treated with osmic acid, the axis surrounded by the myelin sheath. Along the medullary nerve fibers, there are areas not surrounded by the myelin sheath, appearing in formations called Nodes of Ranvier. The distance between a node and another is called Internodal segment. It is not possible to distinguish or note the envelope of the nerve or the envelope of Schwann in these preparations for not pigmented with acid osmic but can be observed the nucleus of Schwann cell.

2. Unmyelinated nerve fibers:

When the fibers are examined after they are pigmented with hematoxylin and eosin, Not the myeloid sheath appears, and we observe that there is only the axis surrounded by the schwan sheath, which can be distinguished by observing the nucleus of the schwan cell that is pigmented with hematoxylin and appears on the neuronal fiber (LS).

As for the cross sections (TS), the bundles of nerve fibers appear round and surrounded by an envelope of vascular connective tissue rich in blood vessels and fat cells called the epinerium. Each bundle is surrounded by connective tissue known as perinerium and the fibers are organized into each other by connective tissue known as endonerium.

Nerve endings

1- **Motor end plate:** Nerve endings kinetic in which the branch of the nervous fibers and each branch ends with one or more plates on the surface of a single muscle fiber, where the branch branch again to form the motor plate and its branch is a network of swollen branches end in the form of a bird's foot.



Motor end plate

الصفيفة الحركية الإنتهائية



Meissner corpuscle: -2- Mainly found in the dermis of the skin of the fingers or toes, it acts as a touch and is found as oval or pear-shaped structures composed of embedded flat epithelial cells embedded and coated with fibrous connective tissue. The neural fiber enters from one end and branches between tactile cells.

Meissner's corpuscle

جسيم (كروية) ميسنر



Found in papillary layer of dermis ويوجد في الطبقة الحليمية للأدمة

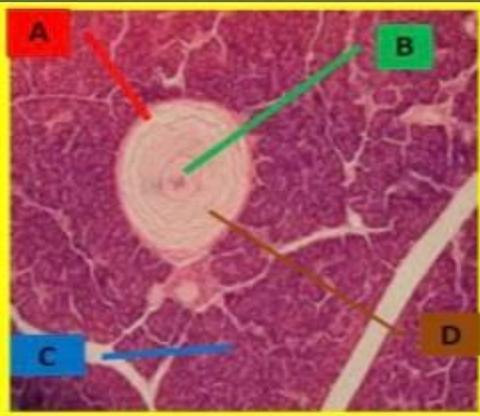
3-Pacinian corpuscle

Its function is a sense of pressure, found in many areas of the body it is found in the deep areas of the skin, ie in the dermis and under the dermis, near the tendons and joints and in the mesentery and in other internal organs such as pancreas and be oval characterized by the presence of a central clear penetrate the nervous fiber and be surrounded by many layers Or oval plates parallel to each other and composed of connective tissue.

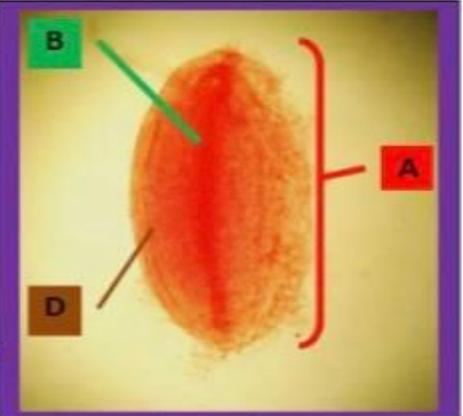


Pacinian Corpuscle

جسيم باسيني



- A- Pacinian corpuscle
جسيم باسيني
- B- Central core
اللب المركزي
- C- Pancreatic tissue
نسيج البنكرياس
- D- Constrictor lamellae
الصفائح المحيطة بالمركز
- Whole mount كامل تحميل
- Transverse section



Found in Pancreas يوجد في البنكرياس

