



Dinámica de Poblaciones Celulares y Neoplasias

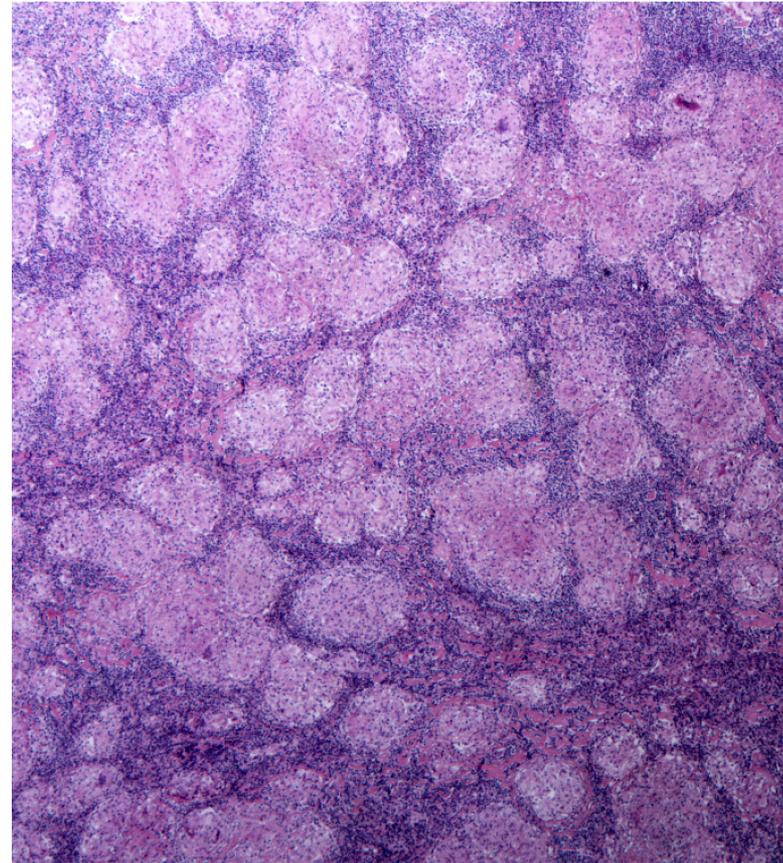
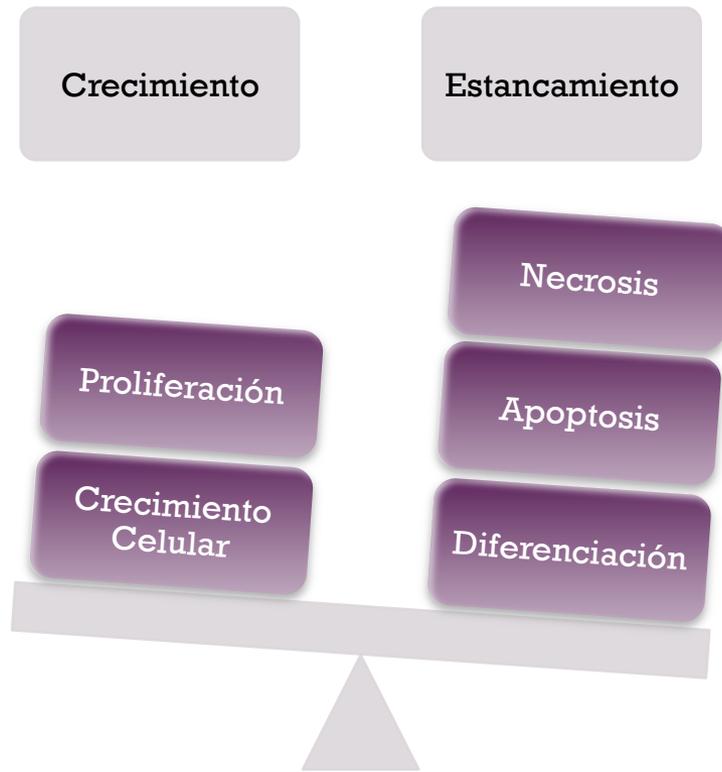
Dra. Paula Segura Hidalgo
Actualizado el 23/03/2016

+ Conceptos Básicos

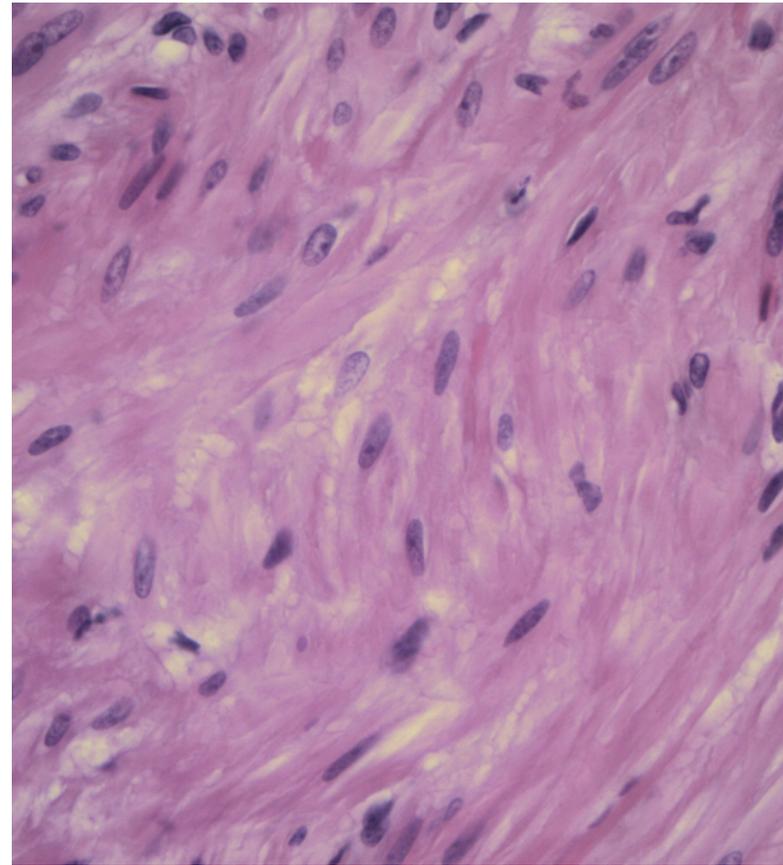


- En adultos, el tamaño de las poblaciones celulares está definido por la tasa de proliferación, diferenciación celular y muerte por apoptosis.

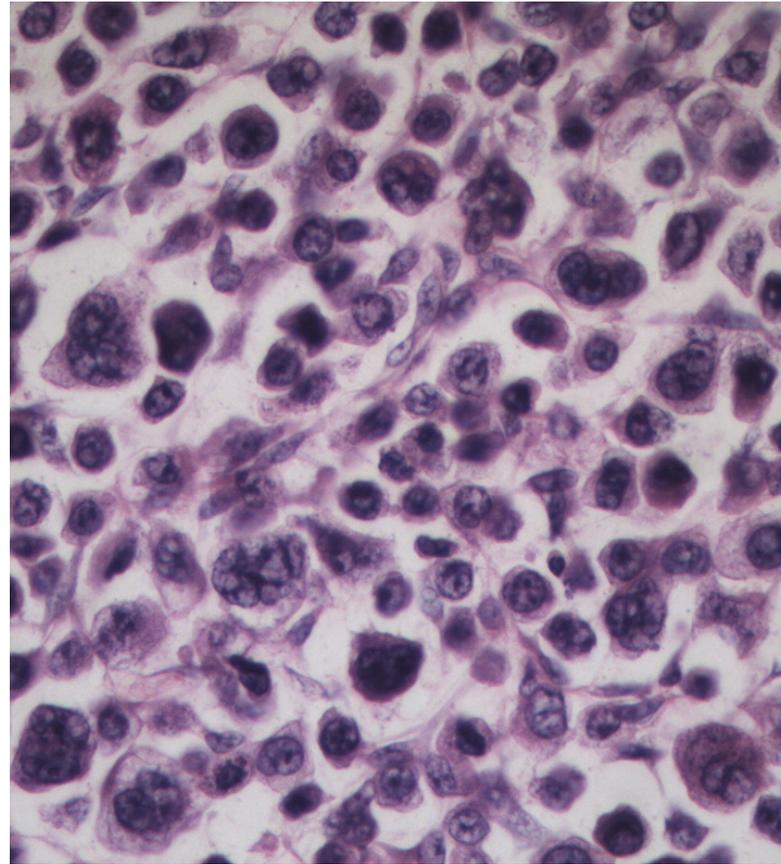
+ Conceptos Básicos



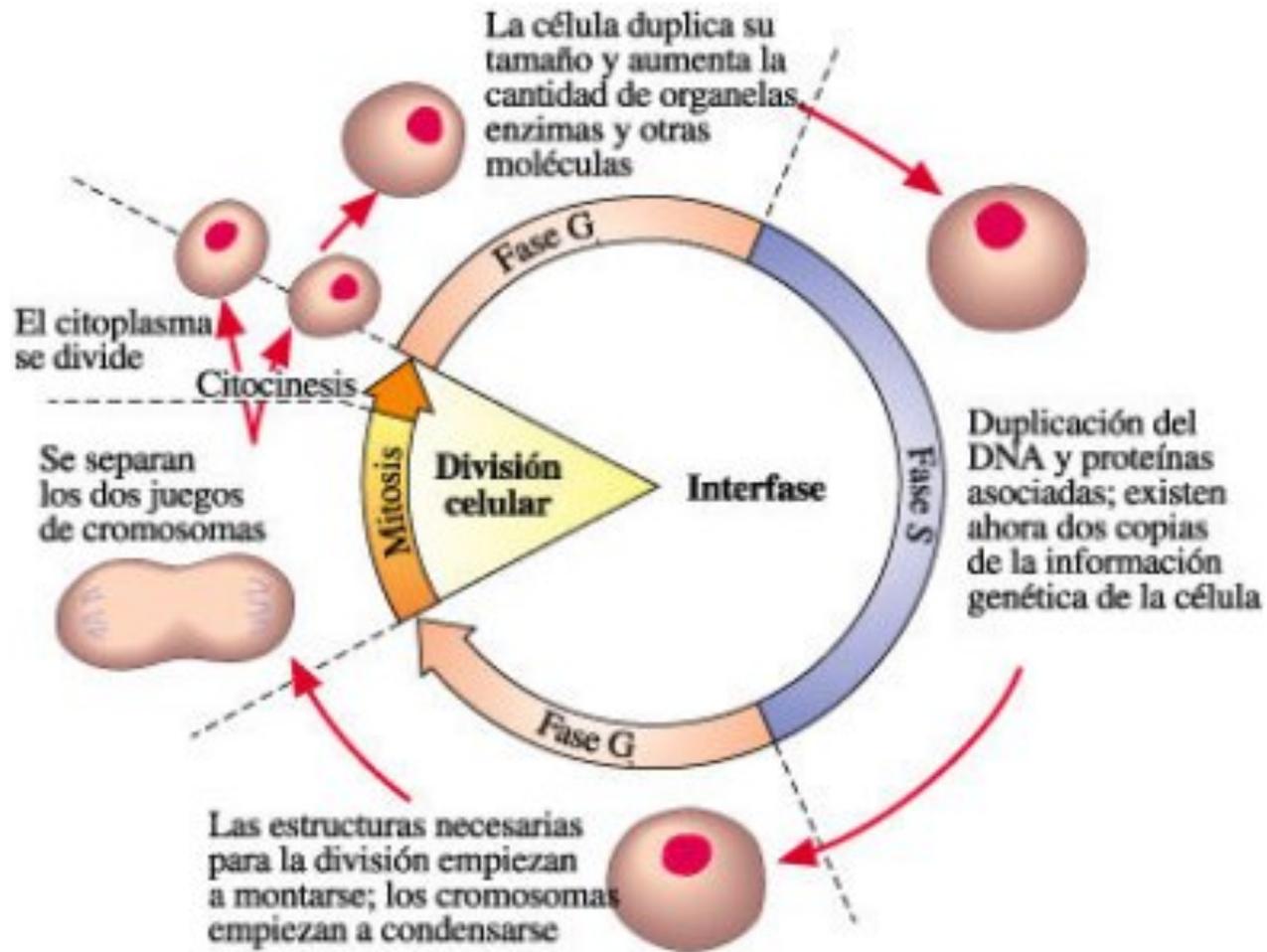
+ Conceptos Básicos



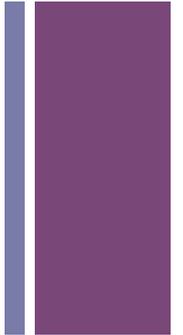
+ Conceptos Básicos



+ Ciclo Celular



+ Tipos de poblaciones celulares



**En División
Continua**

- Piel
- Mucosas

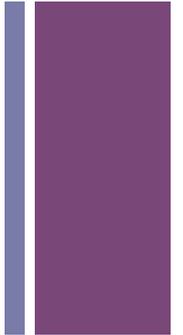
**Quiescentes o
Estables**

- Hígado

**Permanentes
o Estáticas**

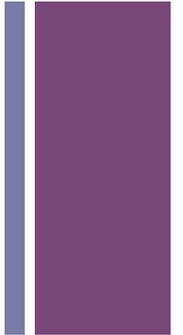
- Neuronas

+ Ejemplo

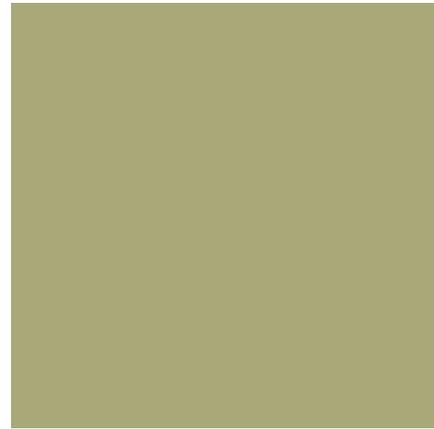
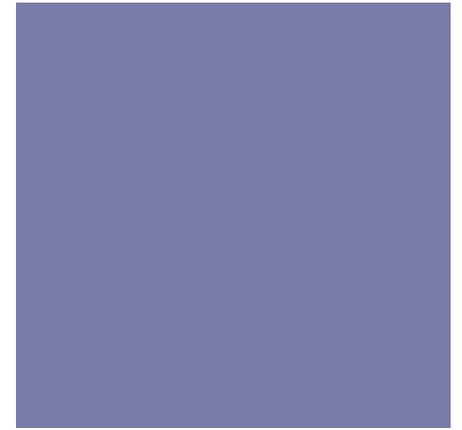
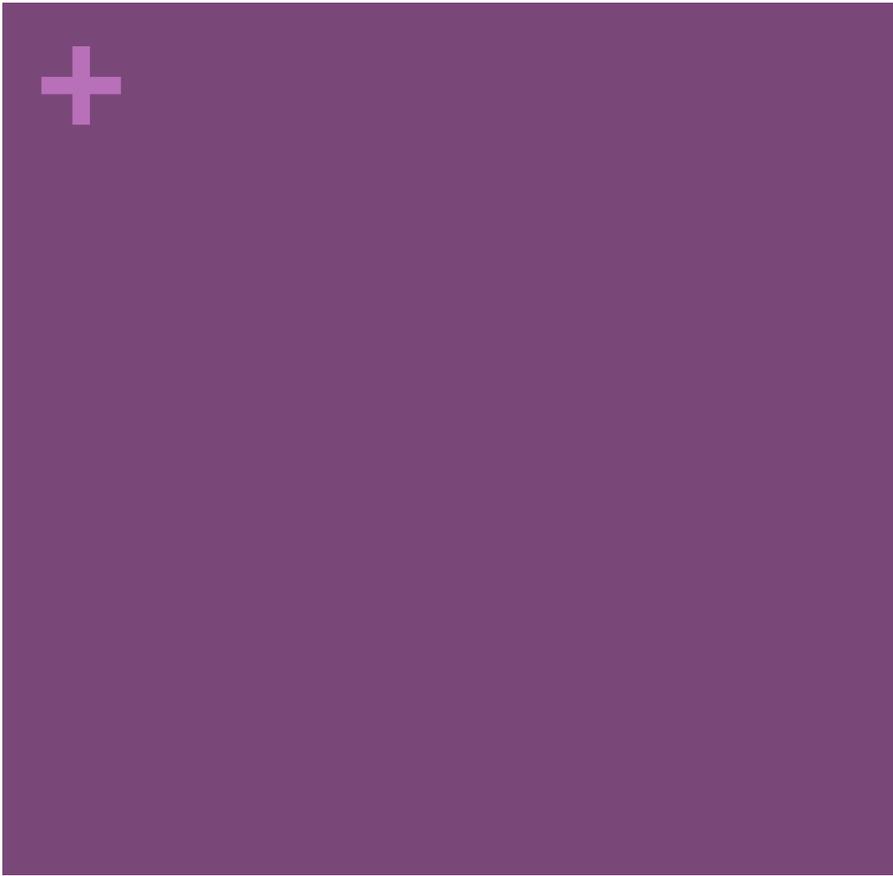


- Piel:
 - Población celular en división continua
 - Las células de los folículos pilosos corresponden a stem cells con al menos dos funciones:
 - Remodelación de folículos pilosos
 - Regeneración epidérmica

+ Ejemplo



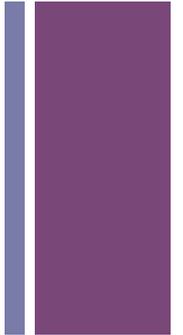
- Hígado:
 - Población celular estable
 - Los hepatocitos son capaces de regenerar hígados post trasplante.



**Trastornos del
crecimiento celular**



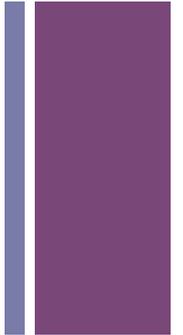
Trastornos por Desorganización



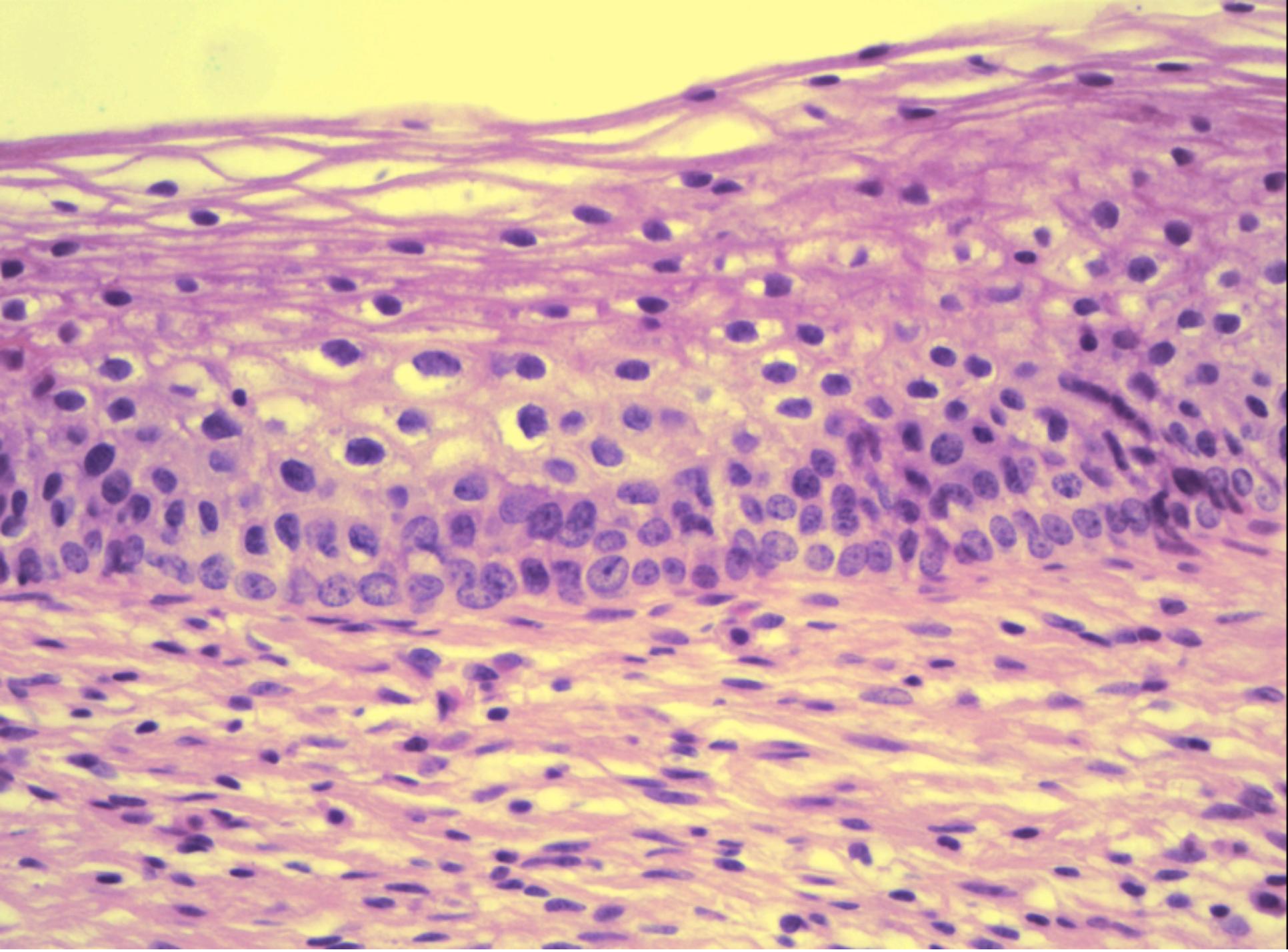
- **Displasia:** Defecto en la organización celular de un tejido, caracterizado por alteraciones de maduración y diferenciación celular.
- **Metaplasia:** Es un cambio reversible en el que un tipo de celular adulto es reemplazado por otro tipo celular adulto o completamente diferenciado.

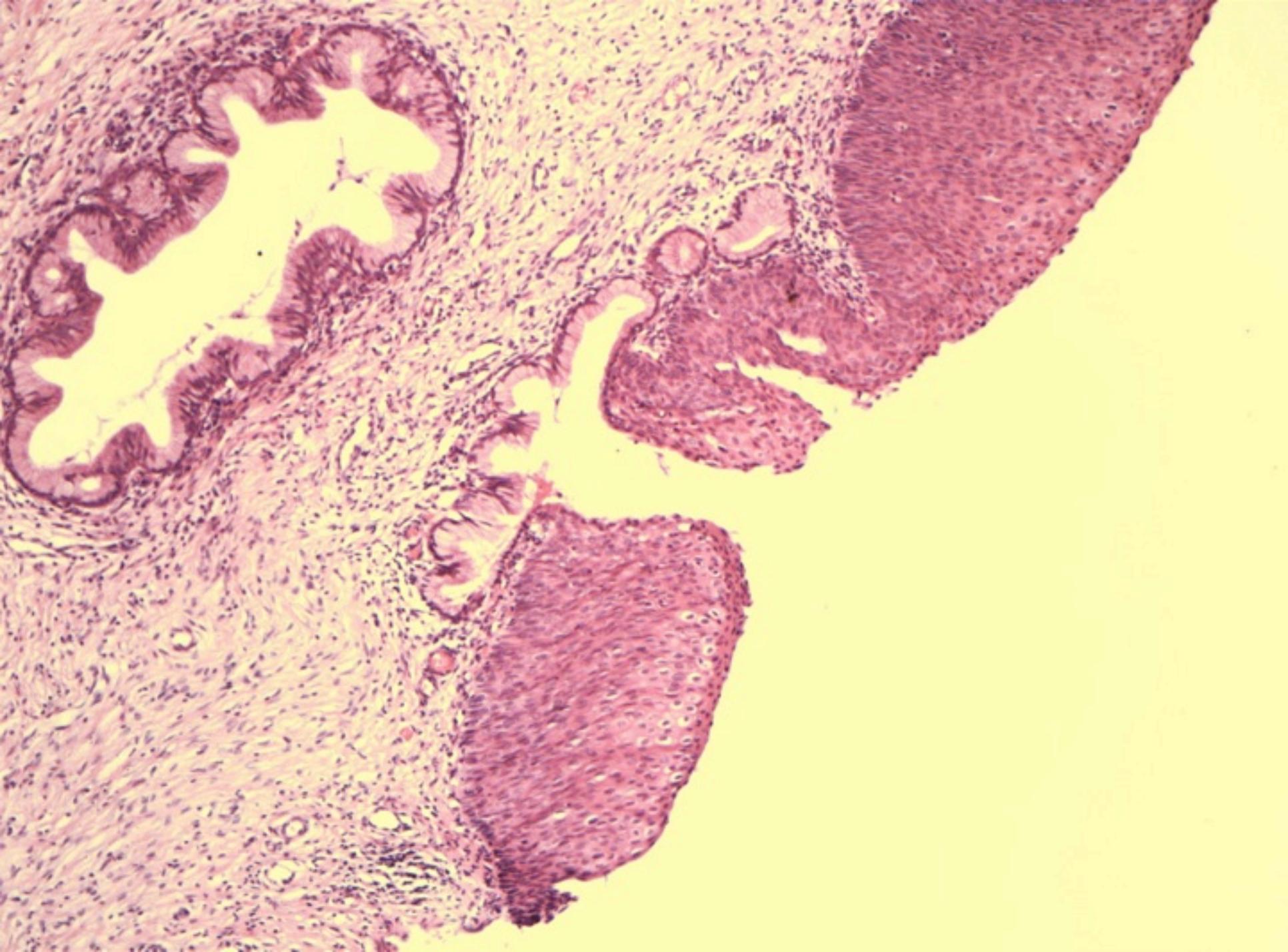


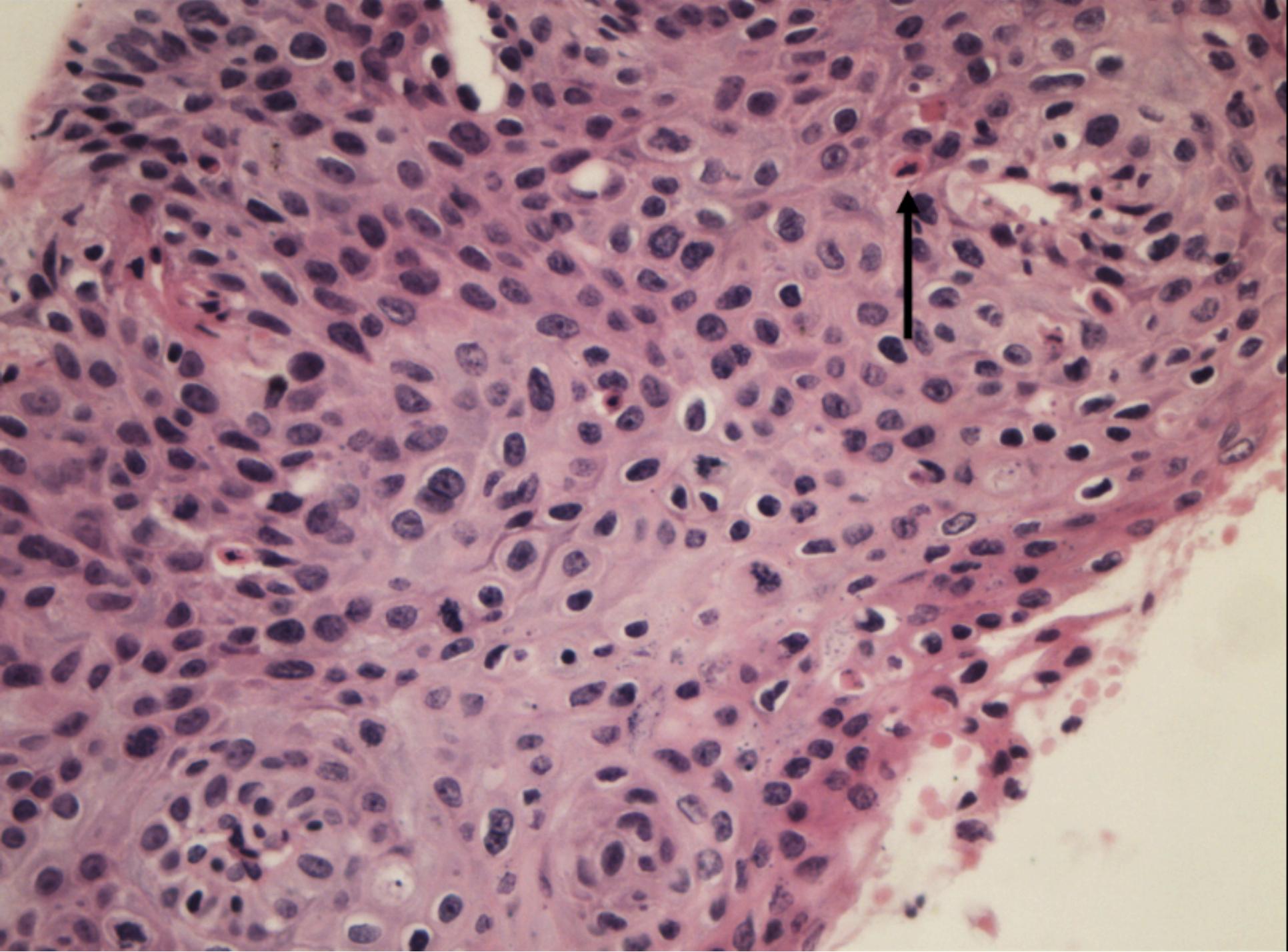
Características de las Displasias

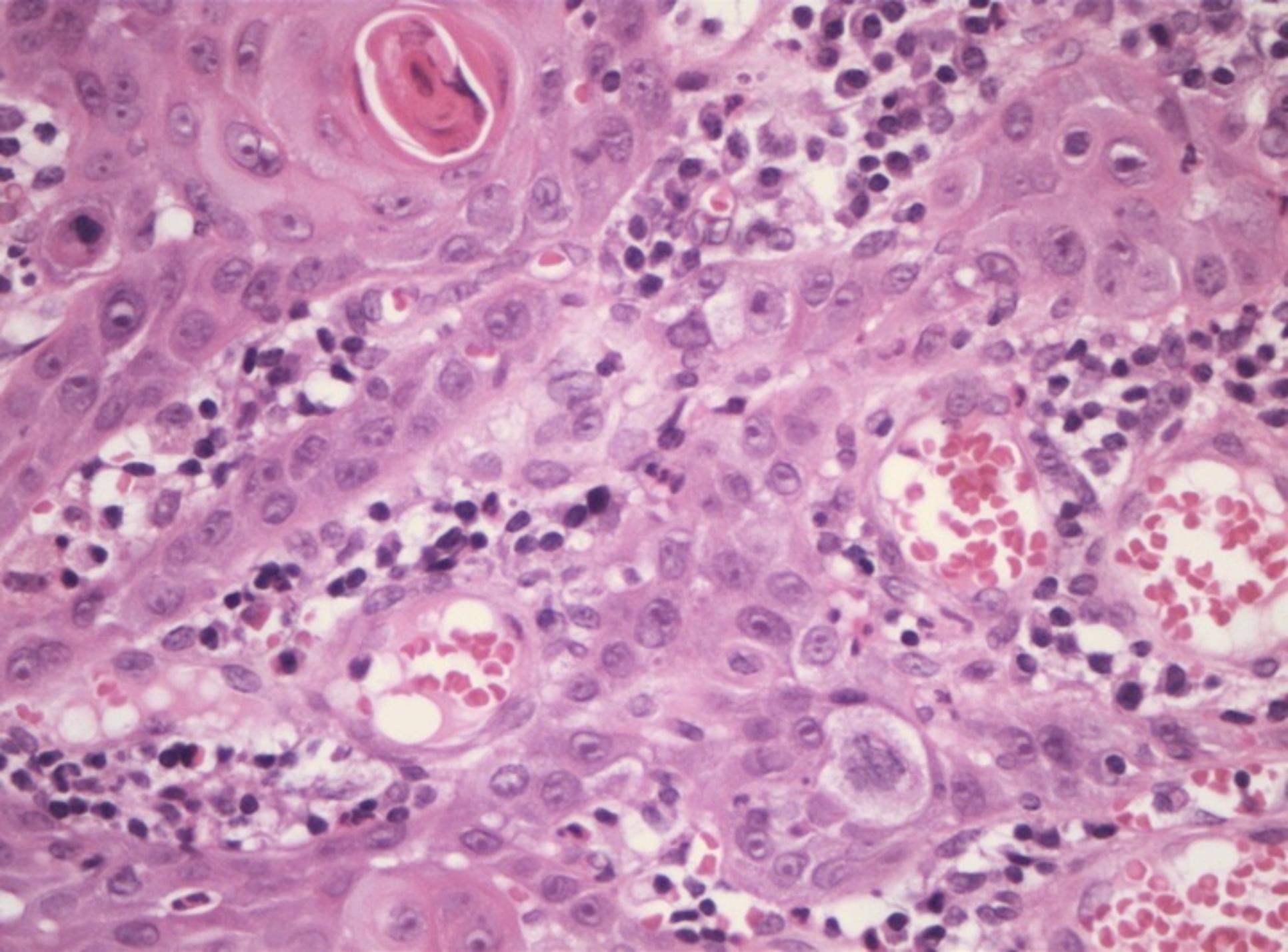


- Se producen en tejidos epiteliales
- Pueden ser reversibles
- Son curables mediante excisión para evitar la evolución



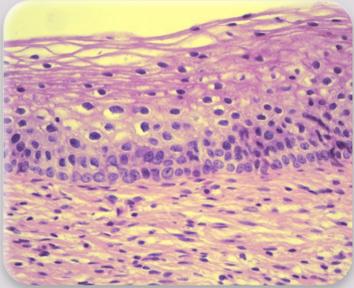
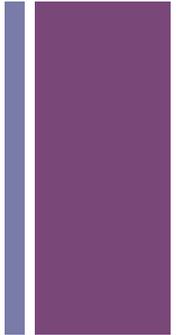




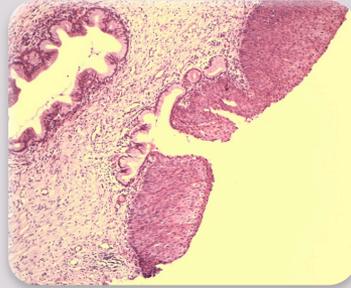




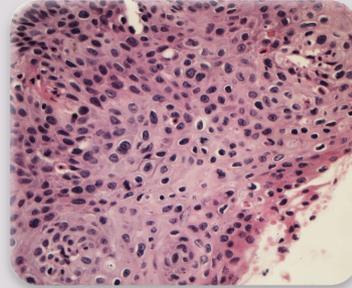
Clasificación de las Displasias



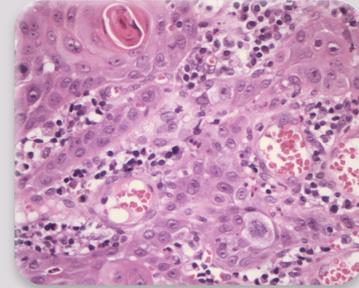
Displasia
Leve



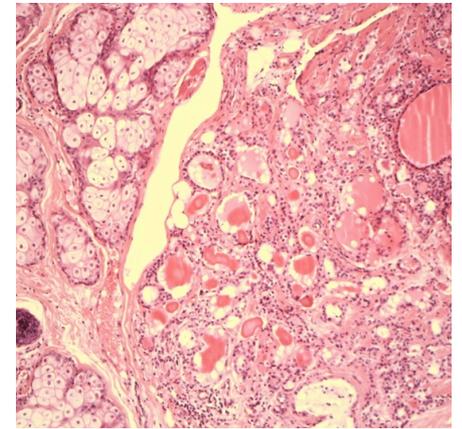
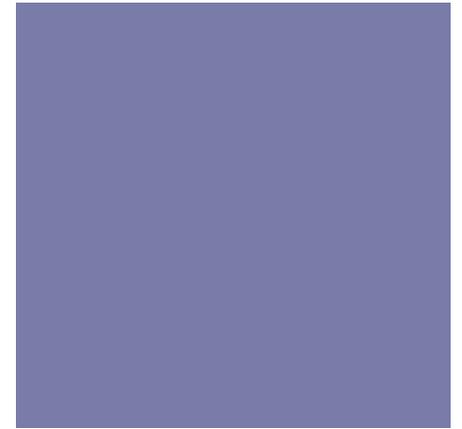
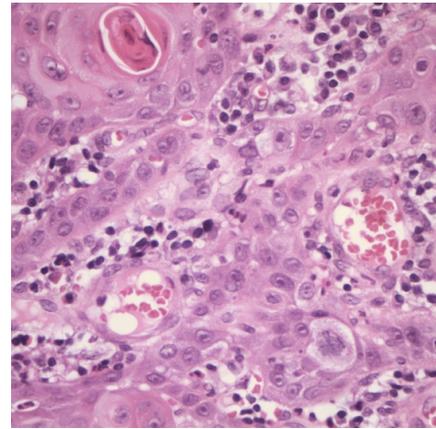
Displasia
Moderada



Displasia
Severa

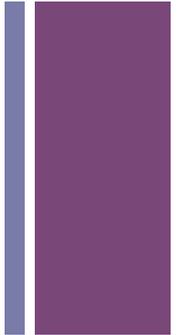


Carcinoma
Invasor



Neoplasias

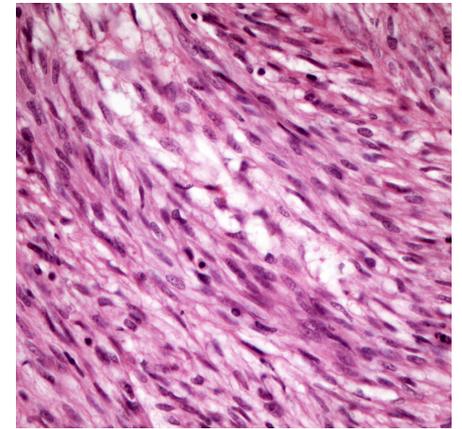
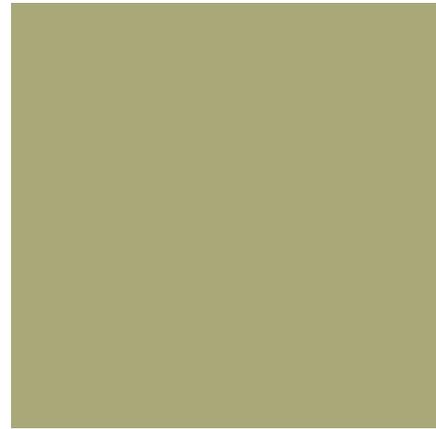
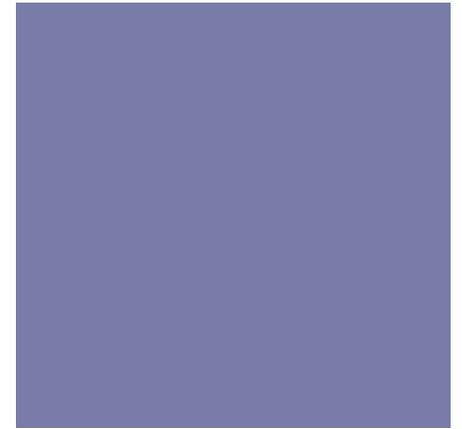
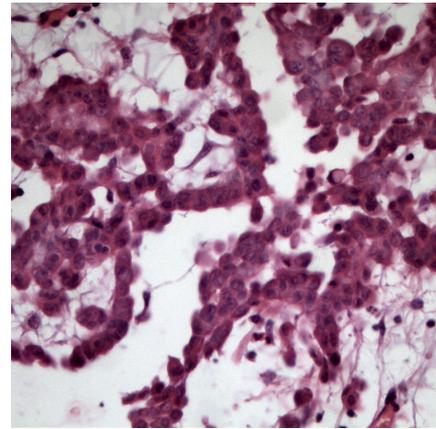
+ Sumario



- Conceptos Generales
- Morfología de las Neoplasias Malignas
- Biología de las Neoplasias
- Estudio de las Neoplasias Malignas

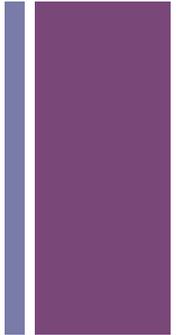


Neoplasias



Conceptos Generales

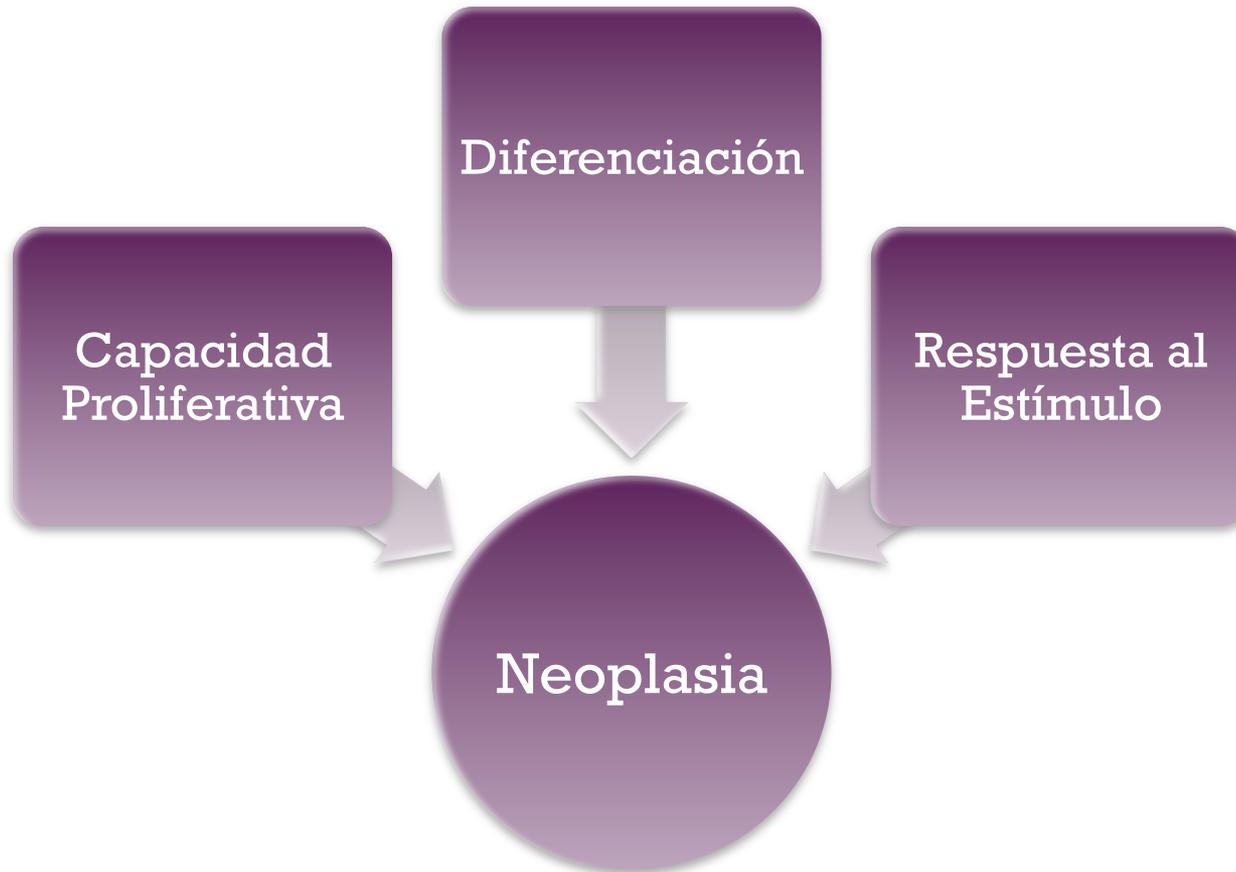
+ Definición



- “Masa de tejido anormal cuyo crecimiento es excesivo e incoordinado en comparación al tejido normal y persiste de la misma forma luego del cese del estímulo que la provocó.”

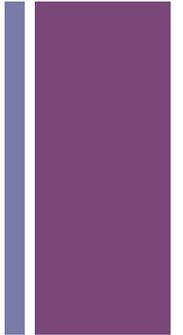
Sir Rupert Willis, 1898-1980

+ Características Generales de las Neoplasias

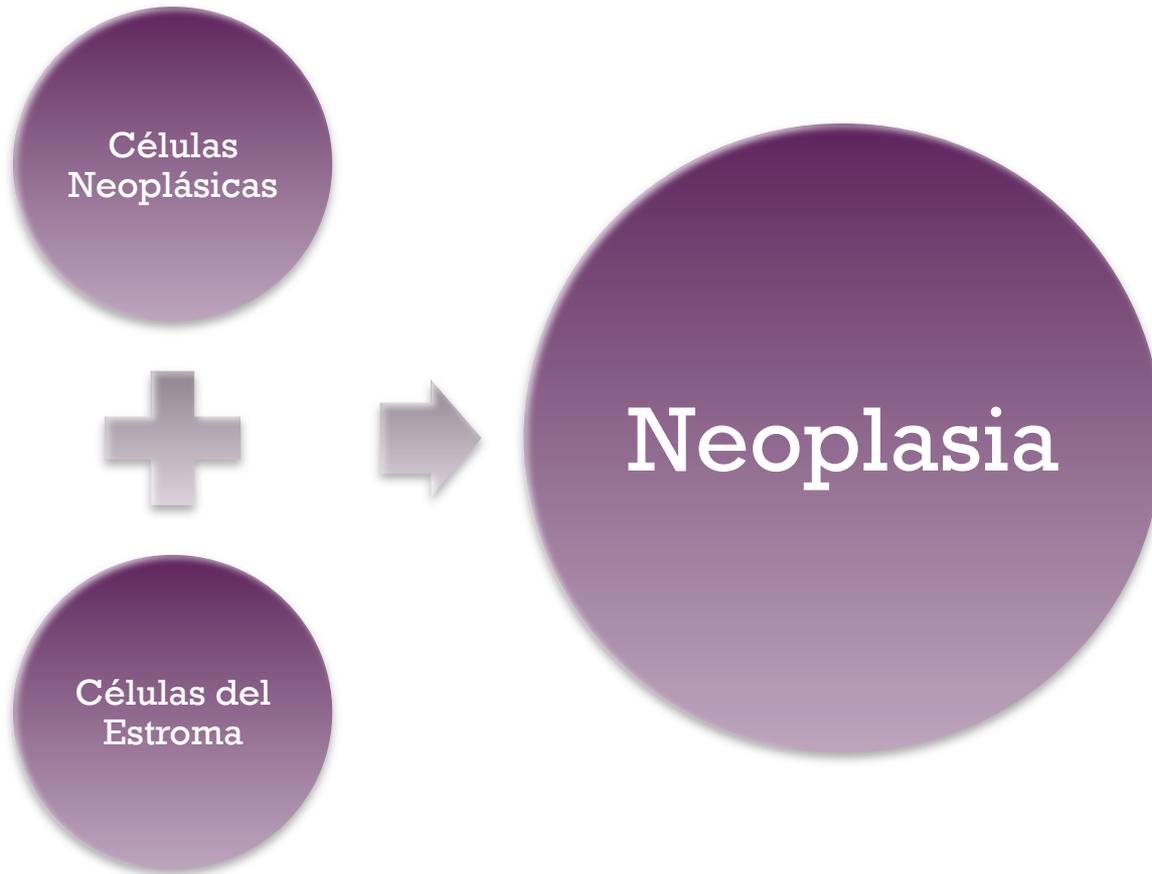


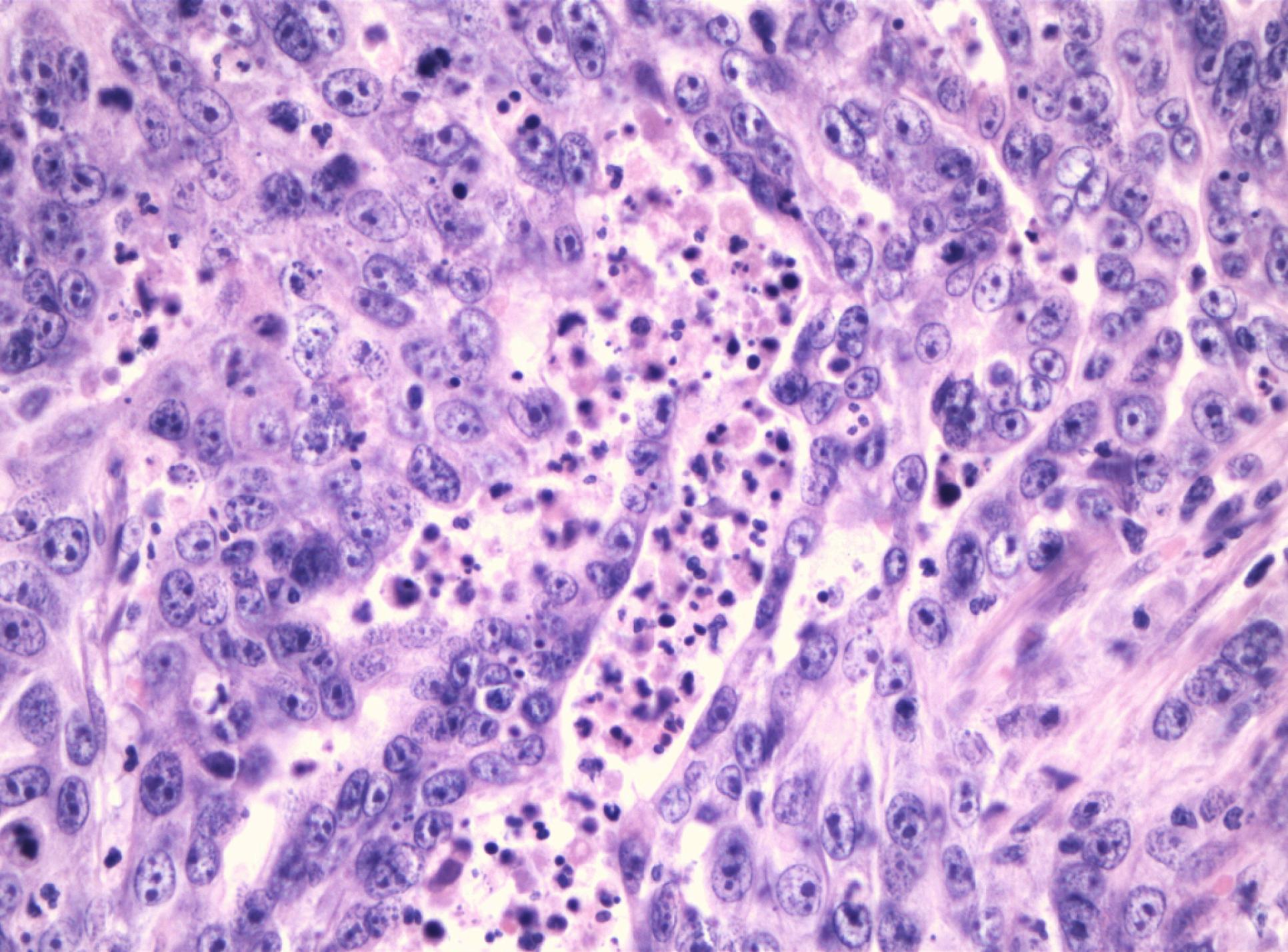


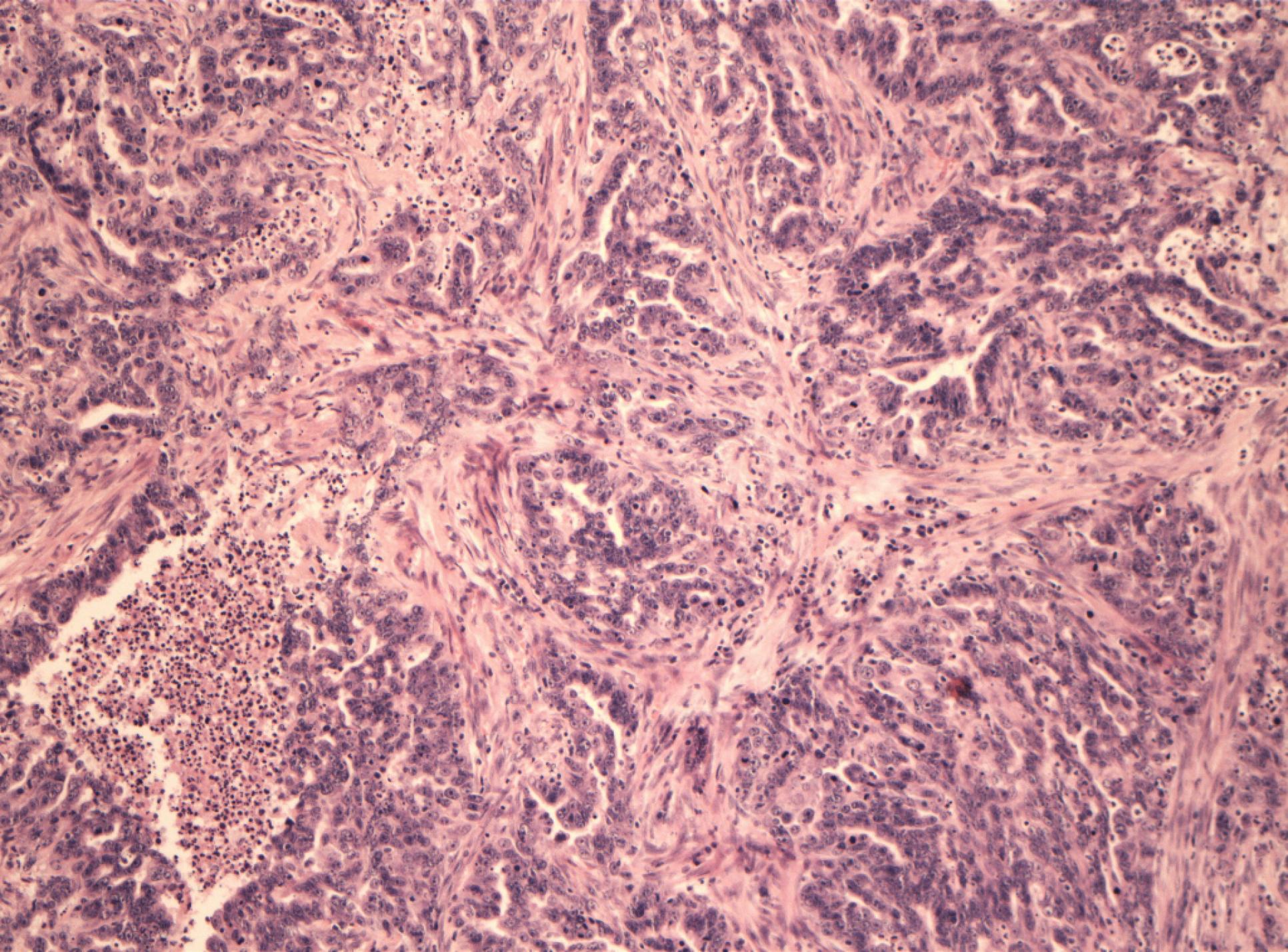
Características Generales de las Neoplasias



+ Características Generales de las Neoplasias

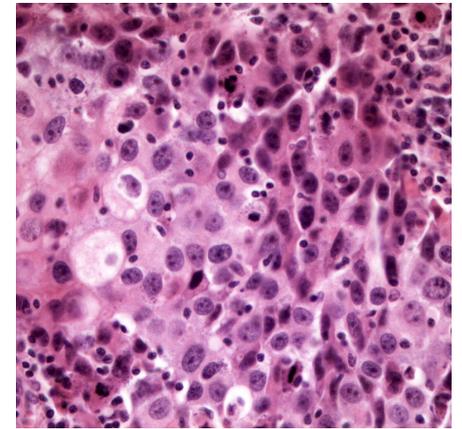
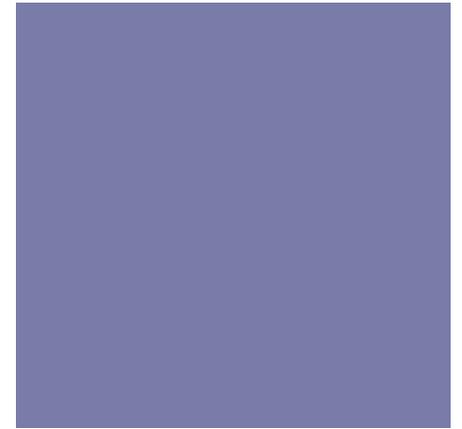
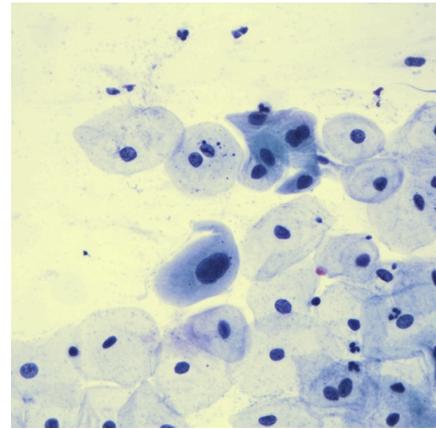








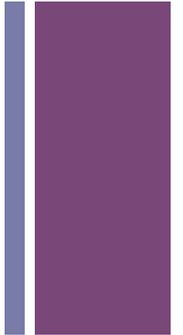
Neoplasias



Morfología



Clasificación según Comportamiento Biológico



Neoplasias
Benignas

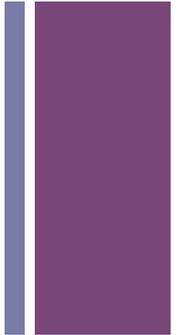
A large, dark purple arrow pointing to the left, containing the text "Neoplasias Benignas" in white.

Neoplasias
Malignas

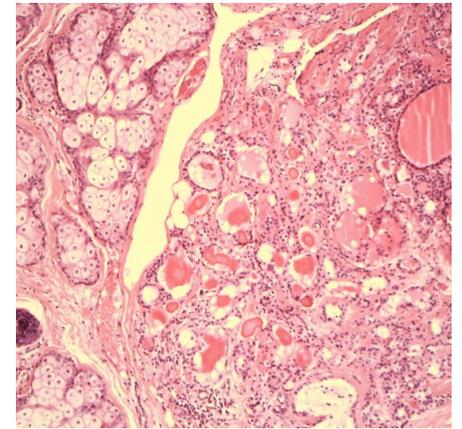
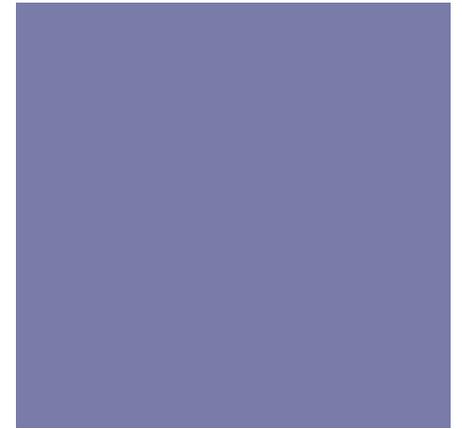
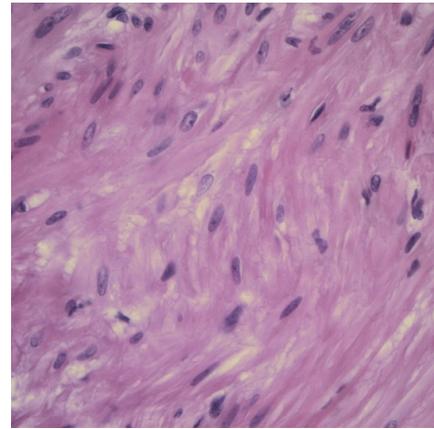
A large, dark purple arrow pointing to the right, containing the text "Neoplasias Malignas" in white.



Clasificación según Comportamiento Biológico



Benignos	Malignos
Crecimiento lento	Crecimiento rápido
No infiltrativa	Infiltrativa
Recuerda al tejido de origen	Diferente al tejido de origen
Células fenotípicamente normales	Células anormales
No da metástasis	Da metástasis
Generalmente no interfieren con la vida del paciente	Pueden causar la muerte



Neoplasias Benignas

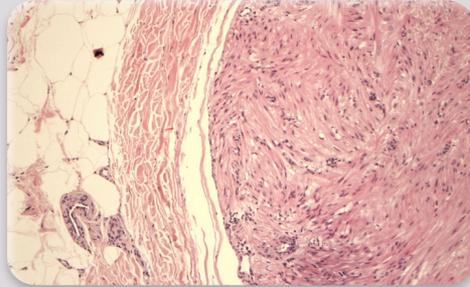


Clasificación de las Neoplasias Benignas



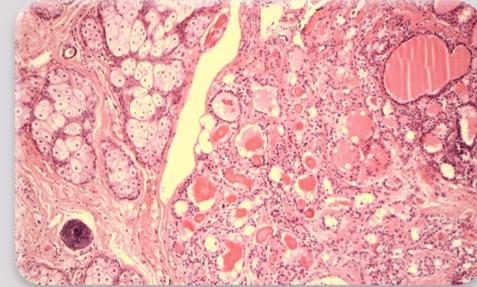
Epiteliales

- Adenomas
- Papilomas



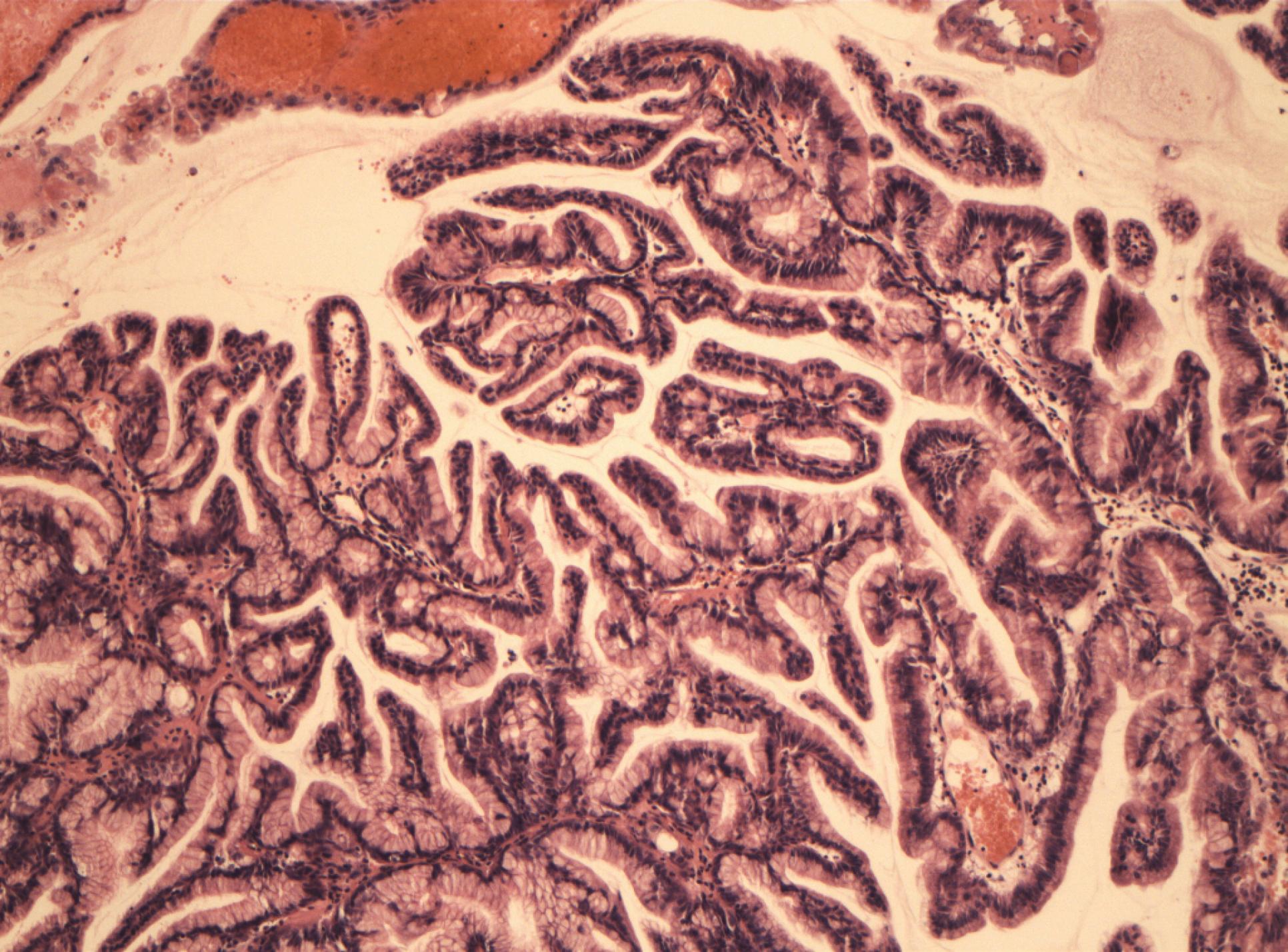
Mesenquimáticas

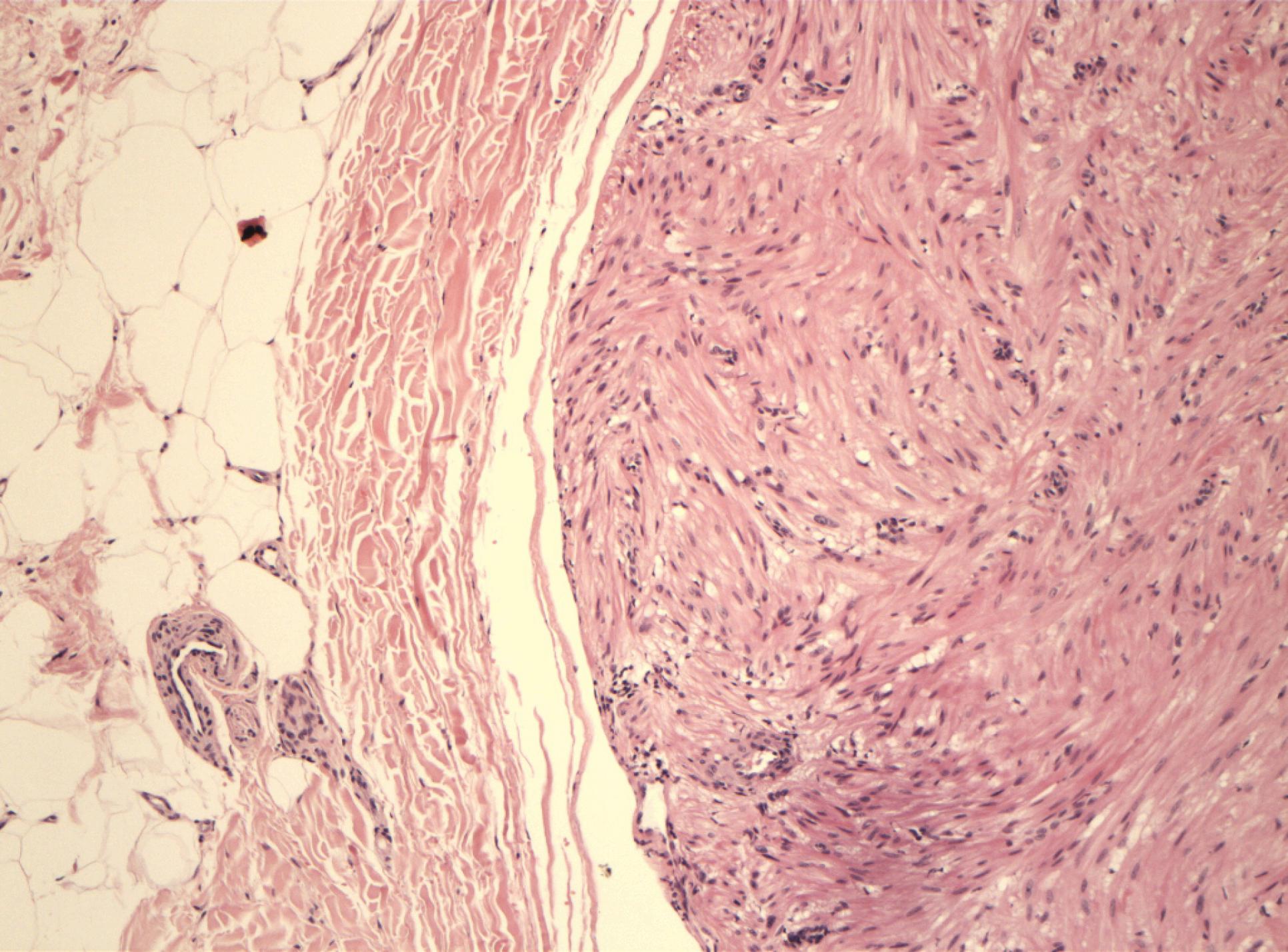
- Tejido de origen + sufijo "oma"

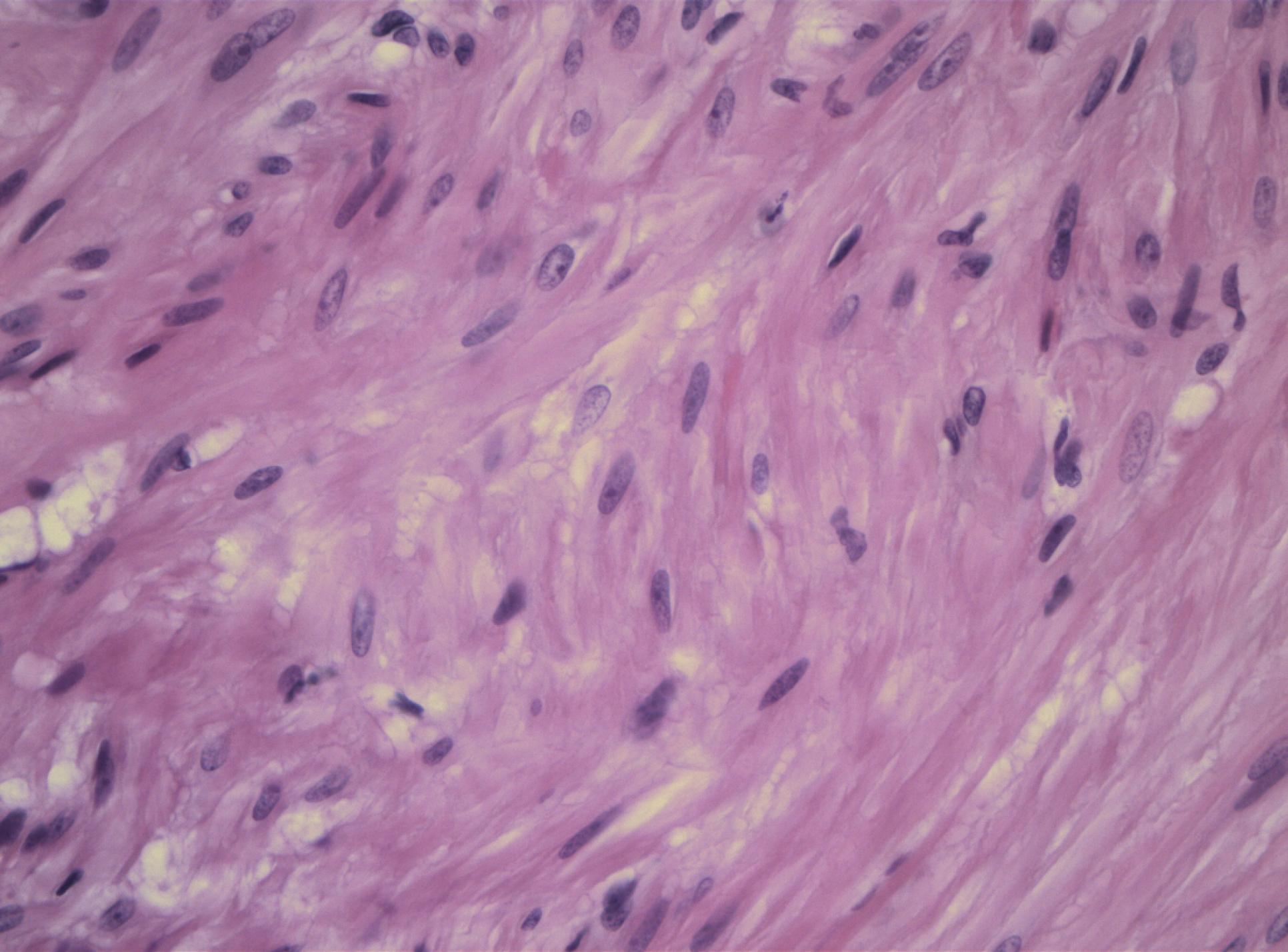


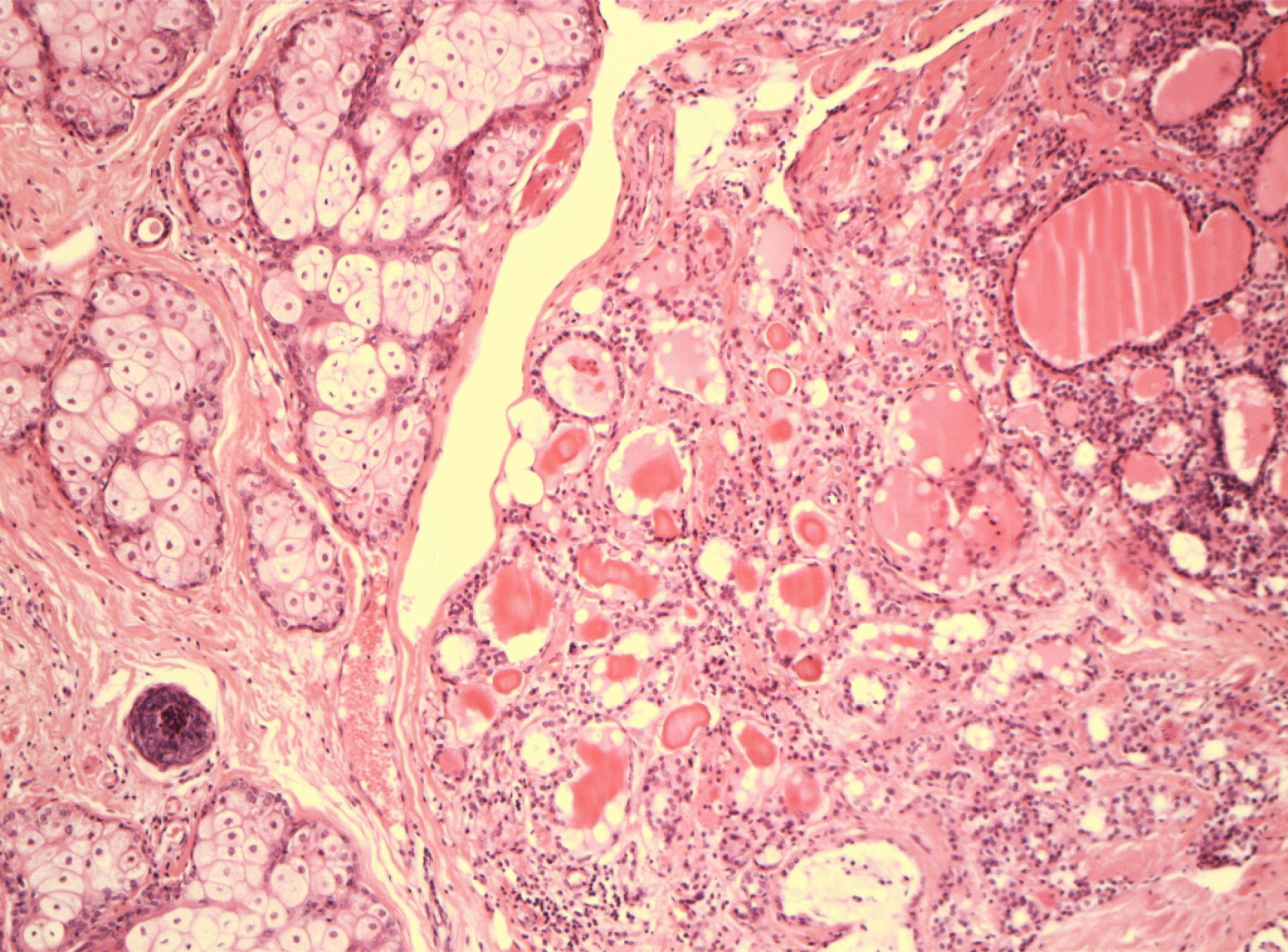
Variedades Especiales

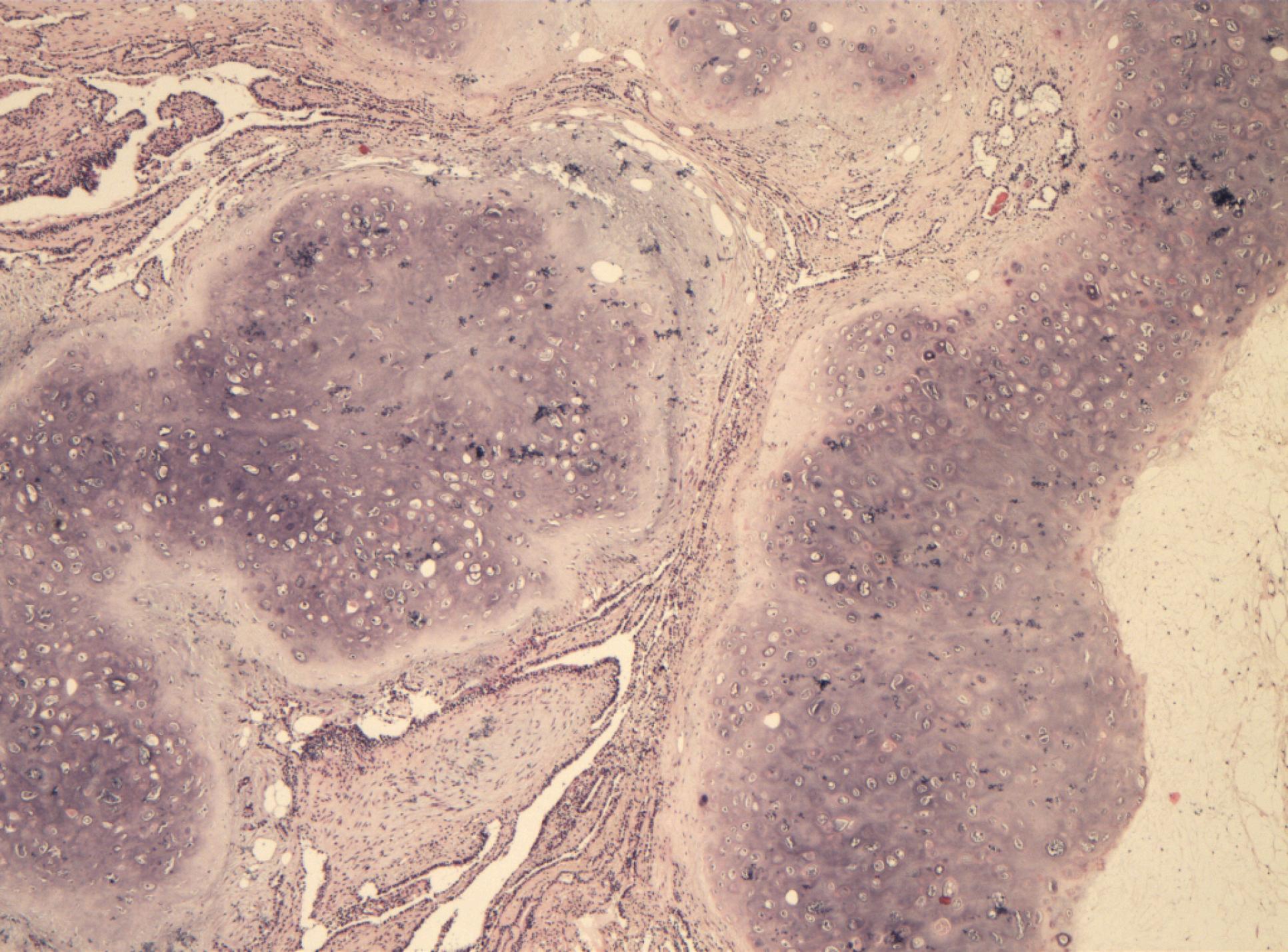
- Teratomas
- Hamartomas
- Coristomas

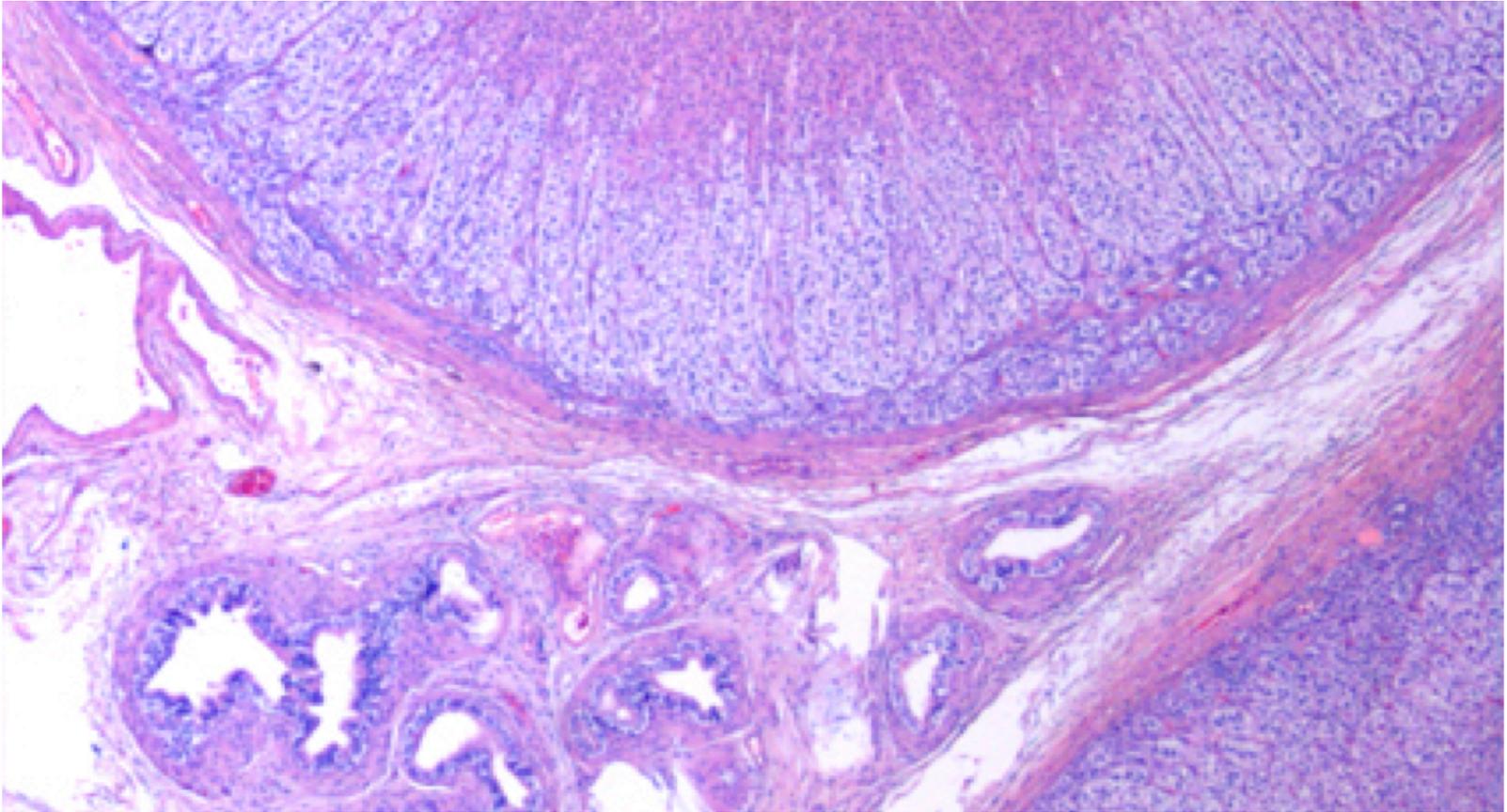


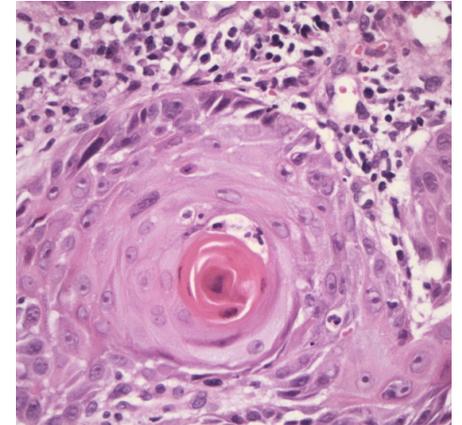
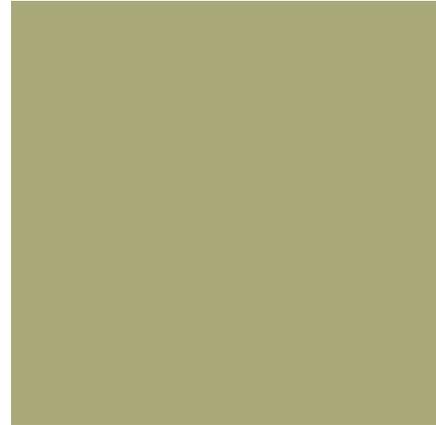
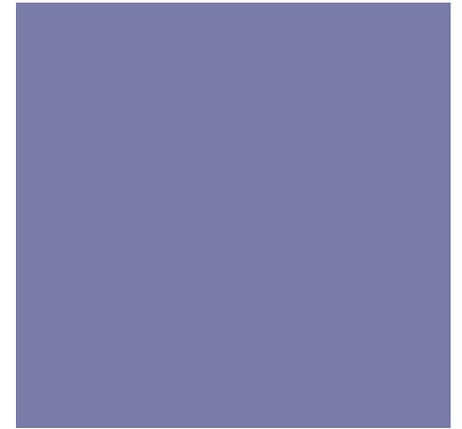
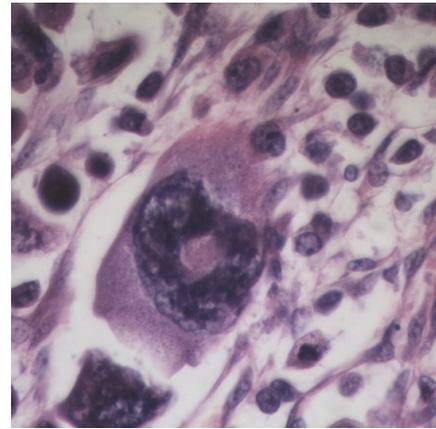






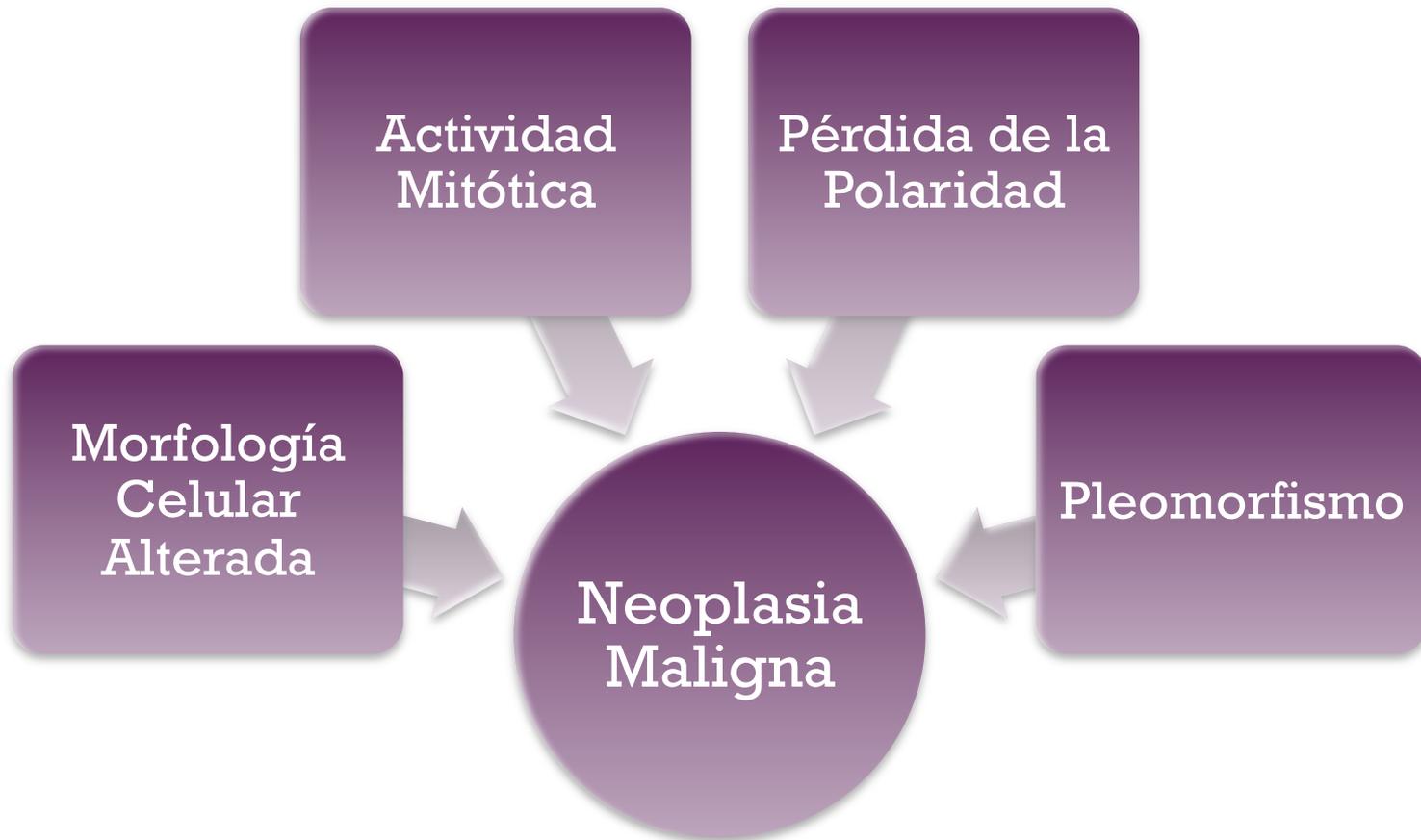
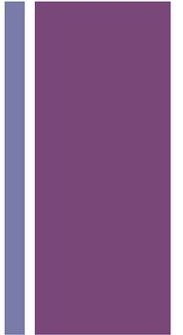


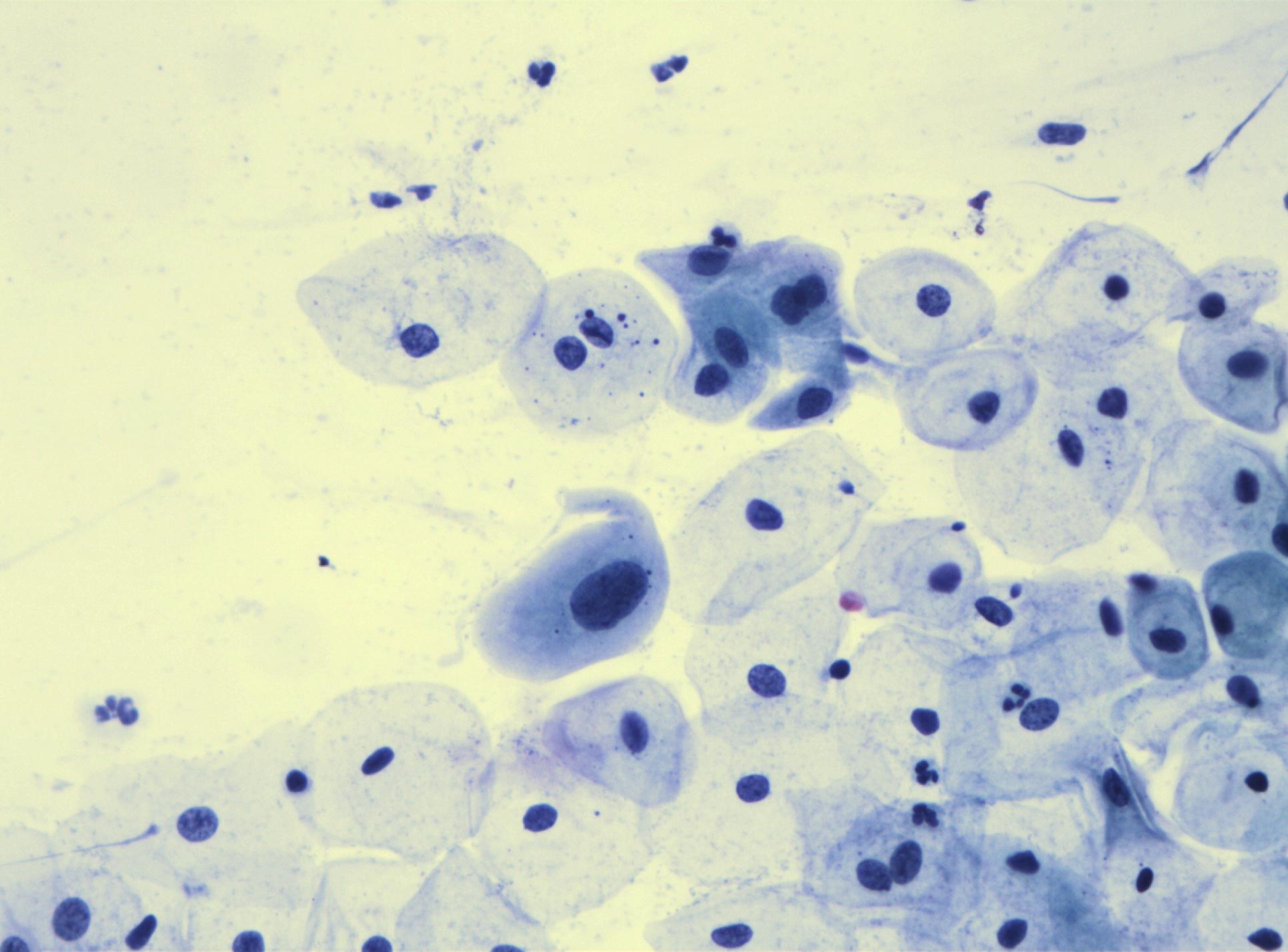


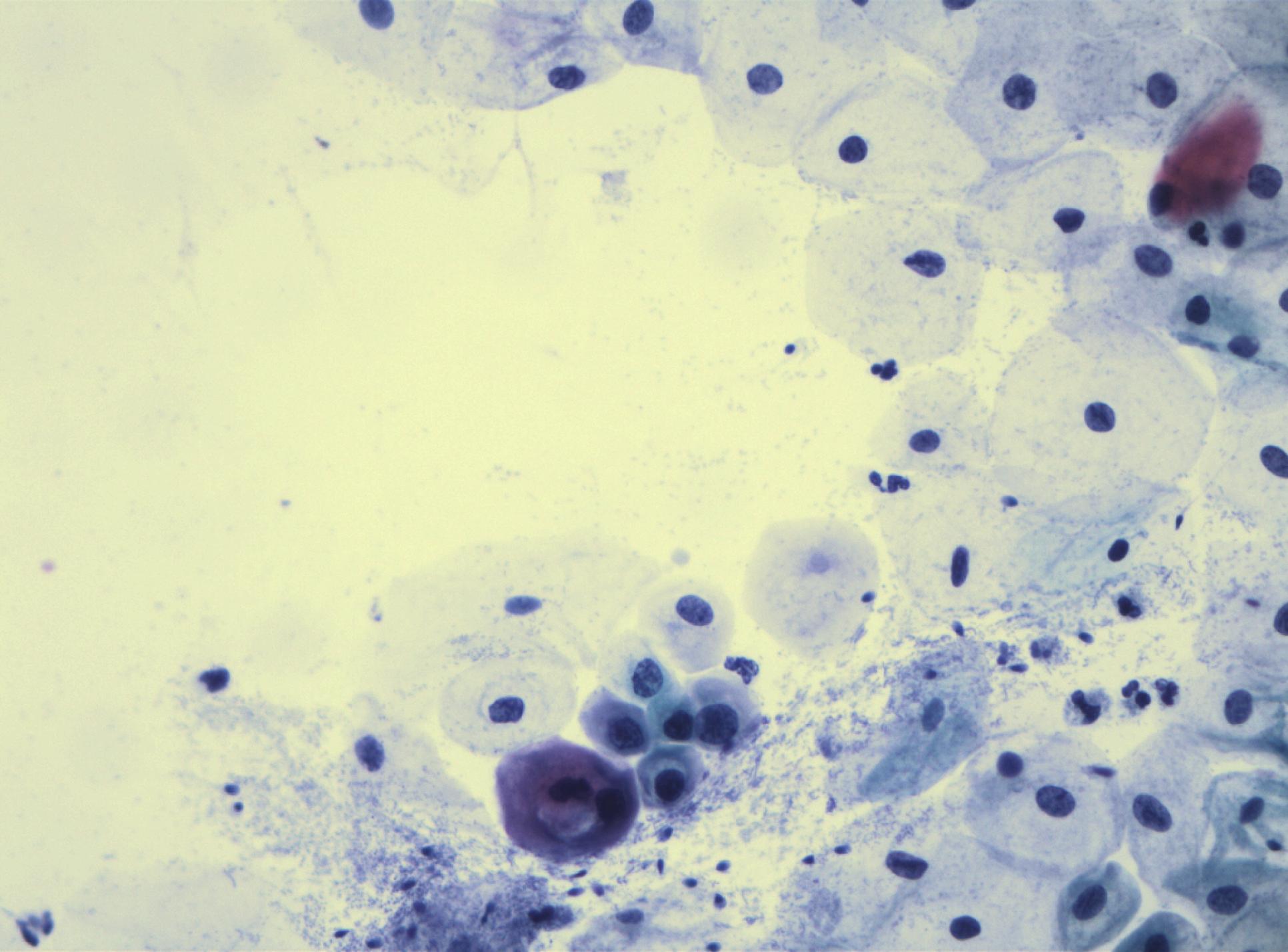


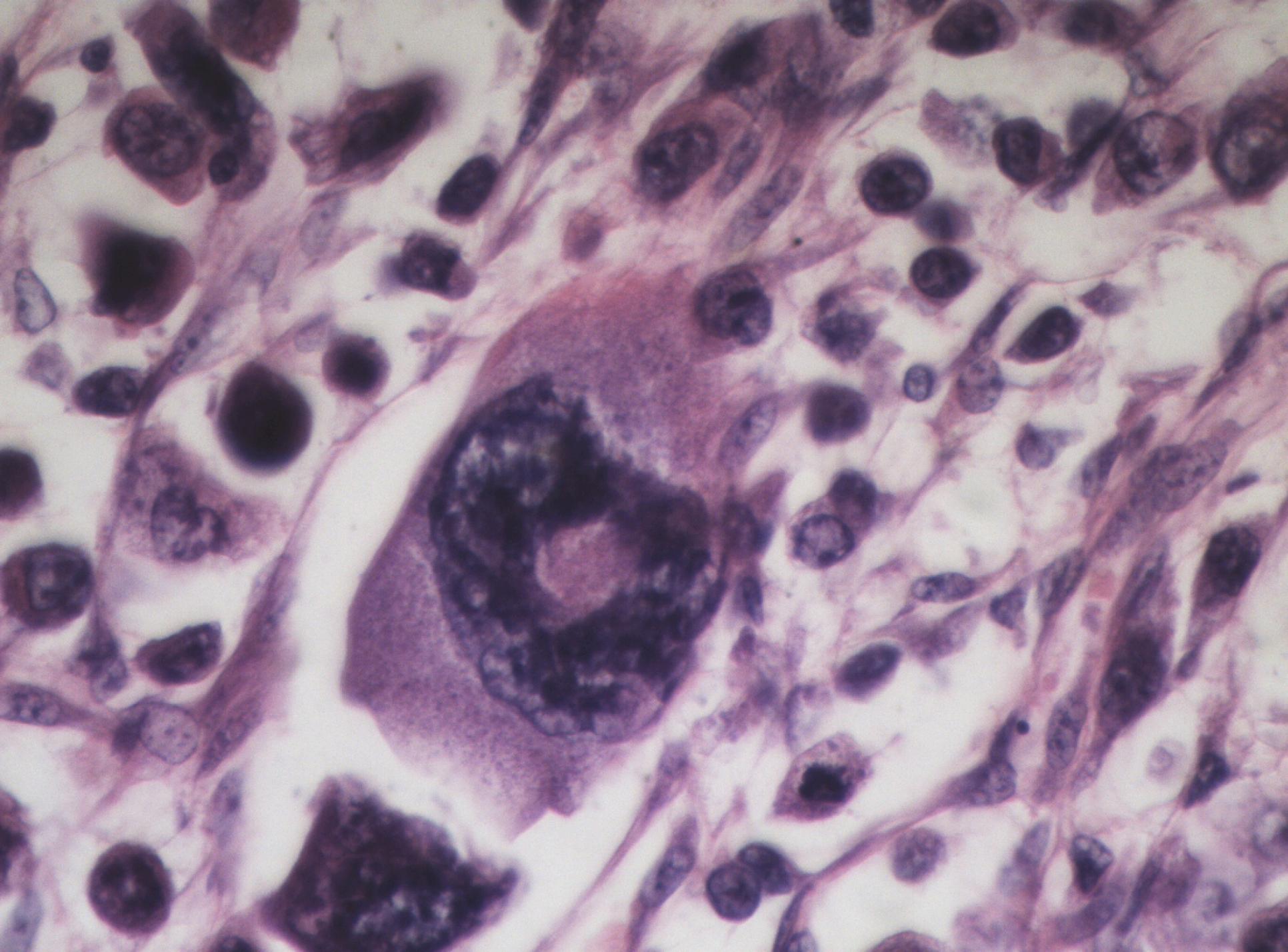
Neoplasias Malignas

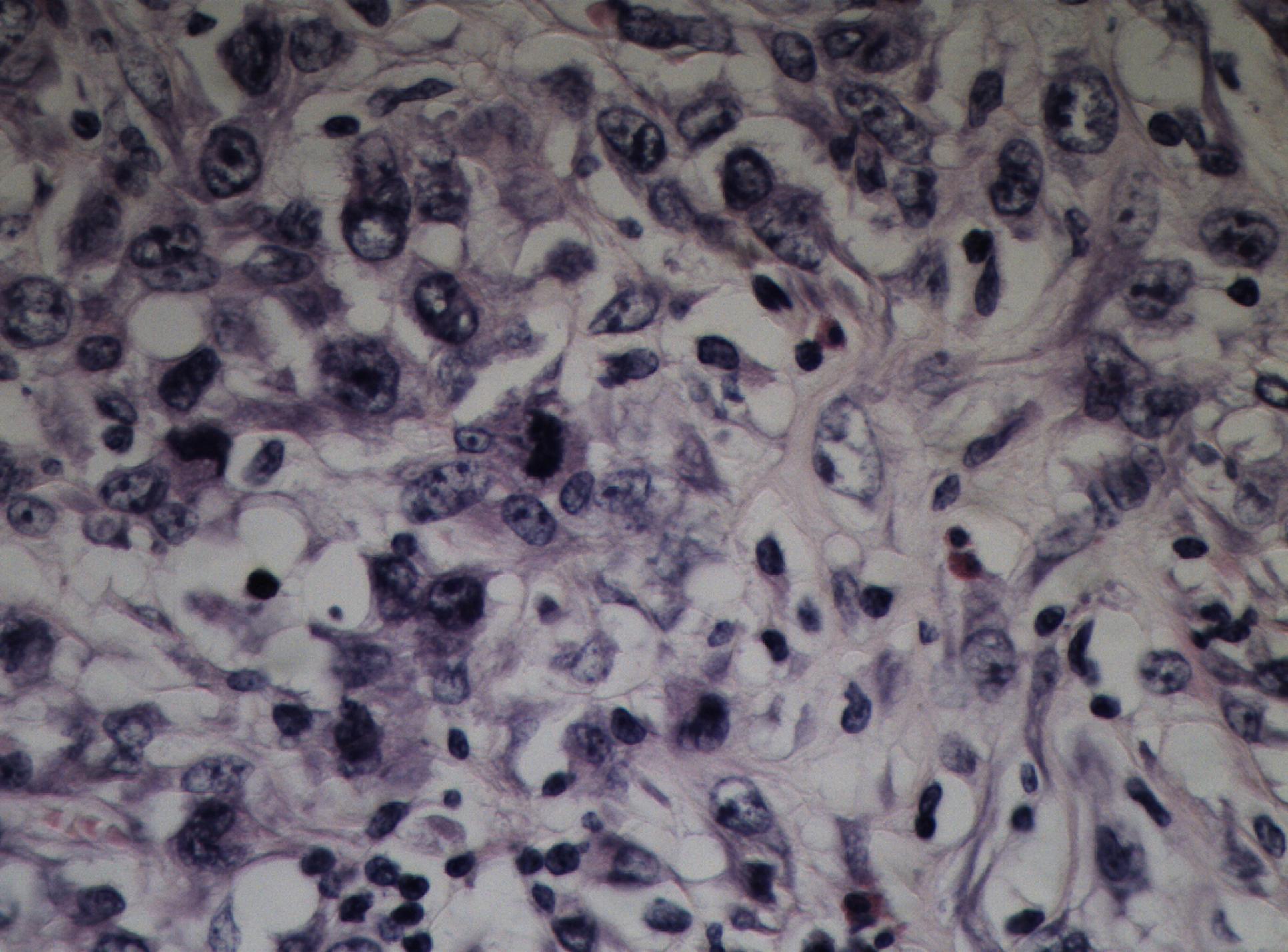
+ Morfología de las Neoplasias Malignas

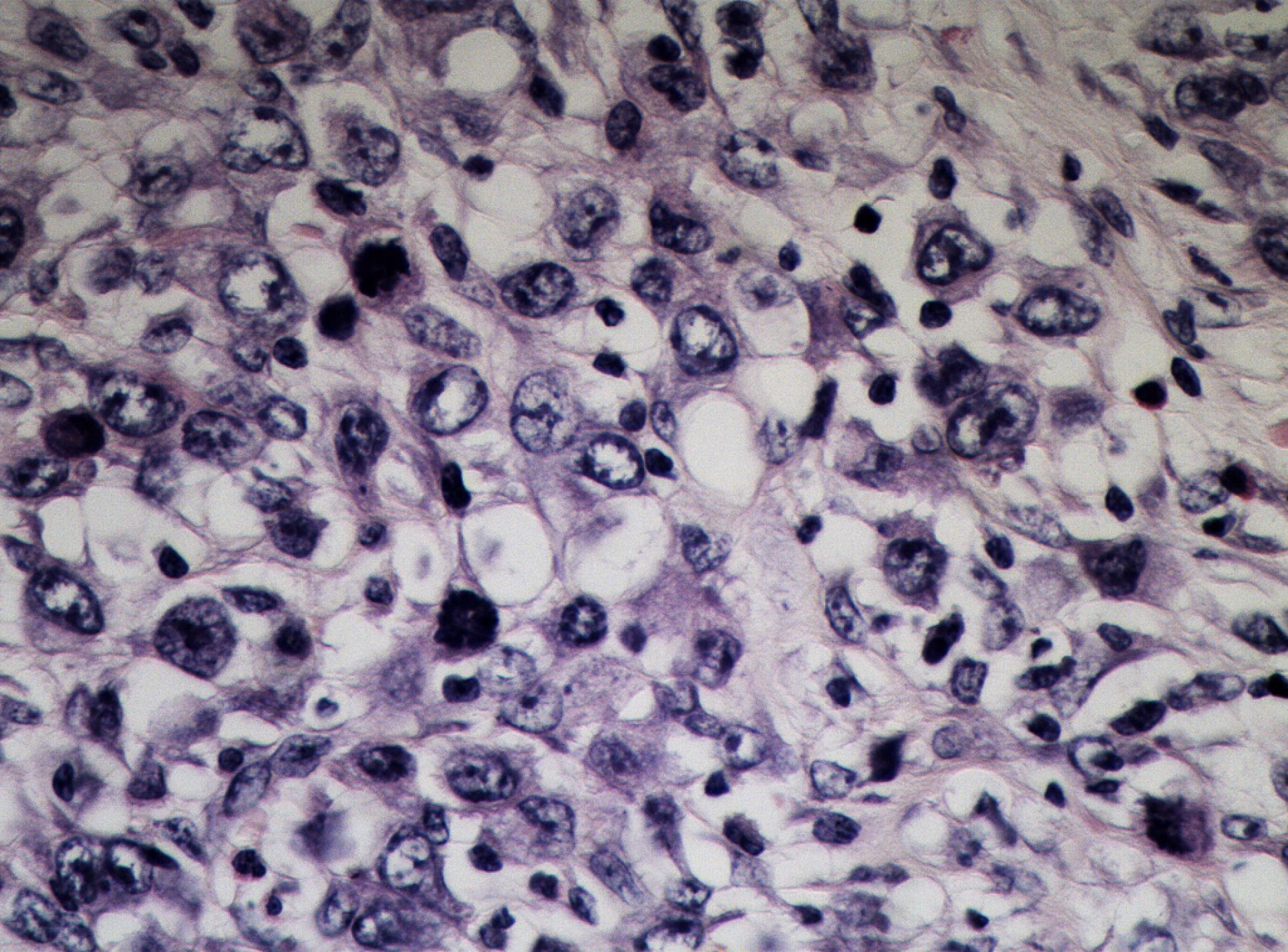


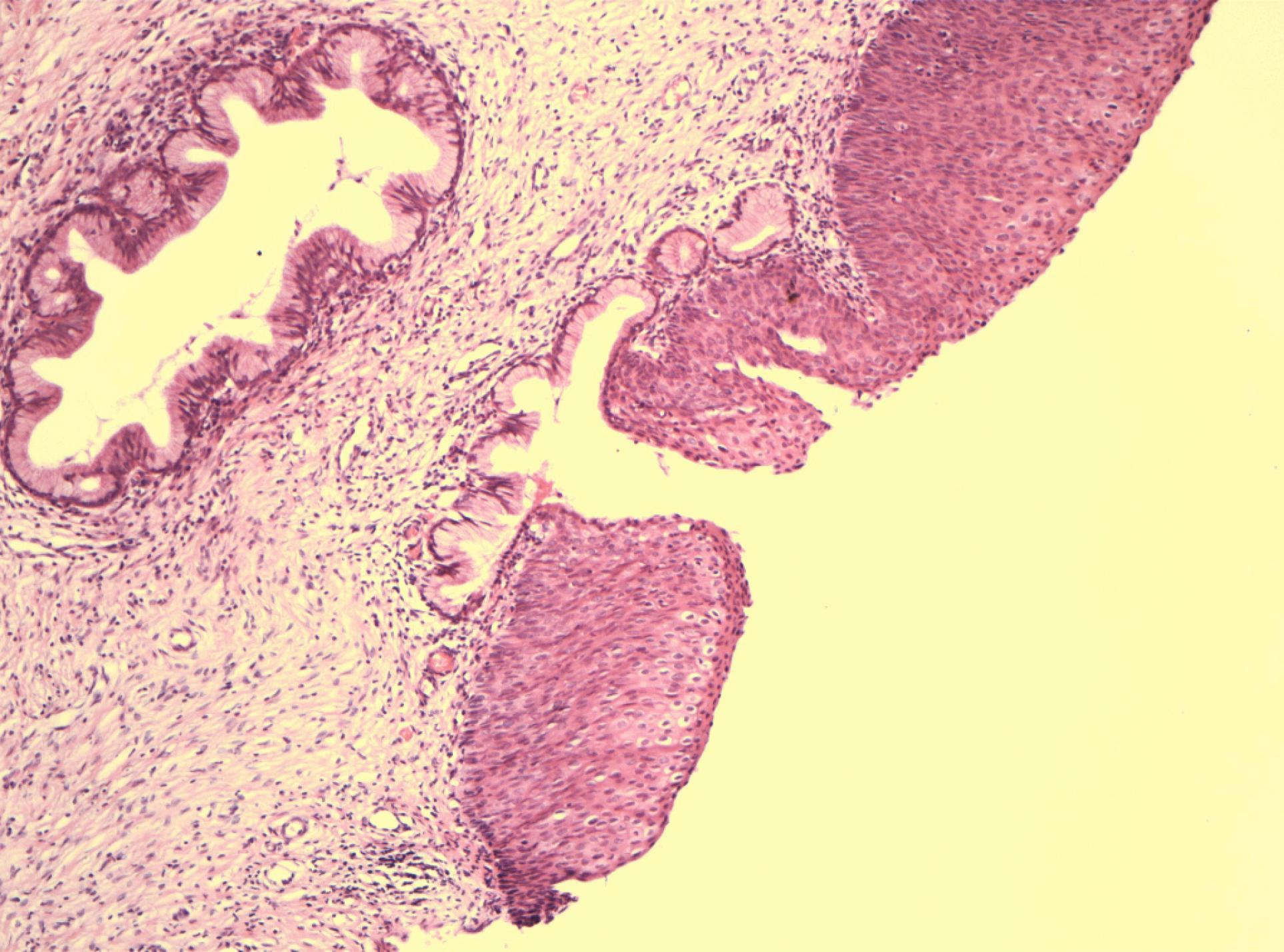


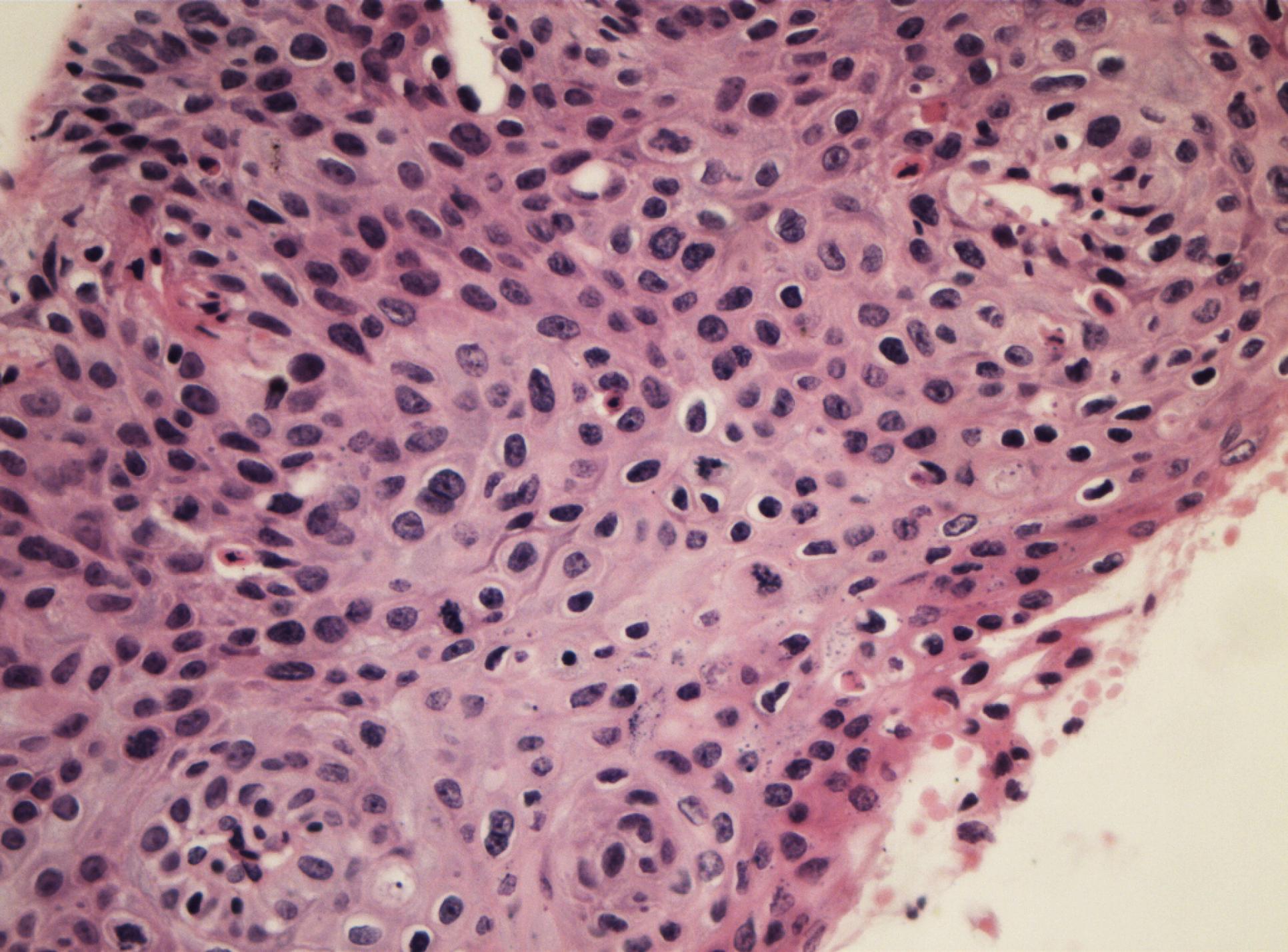














Conceptos de Diferenciación y Anaplasia

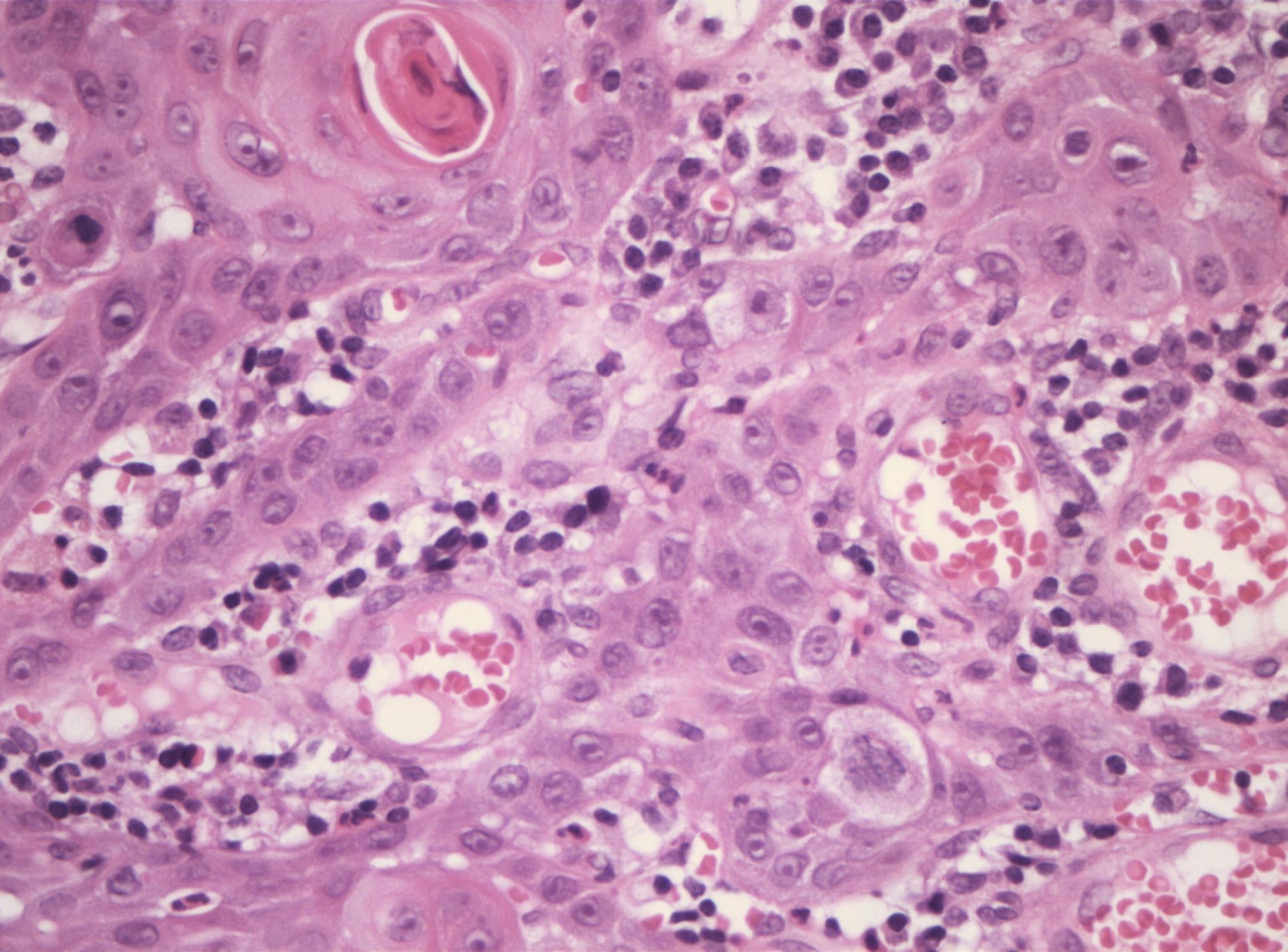


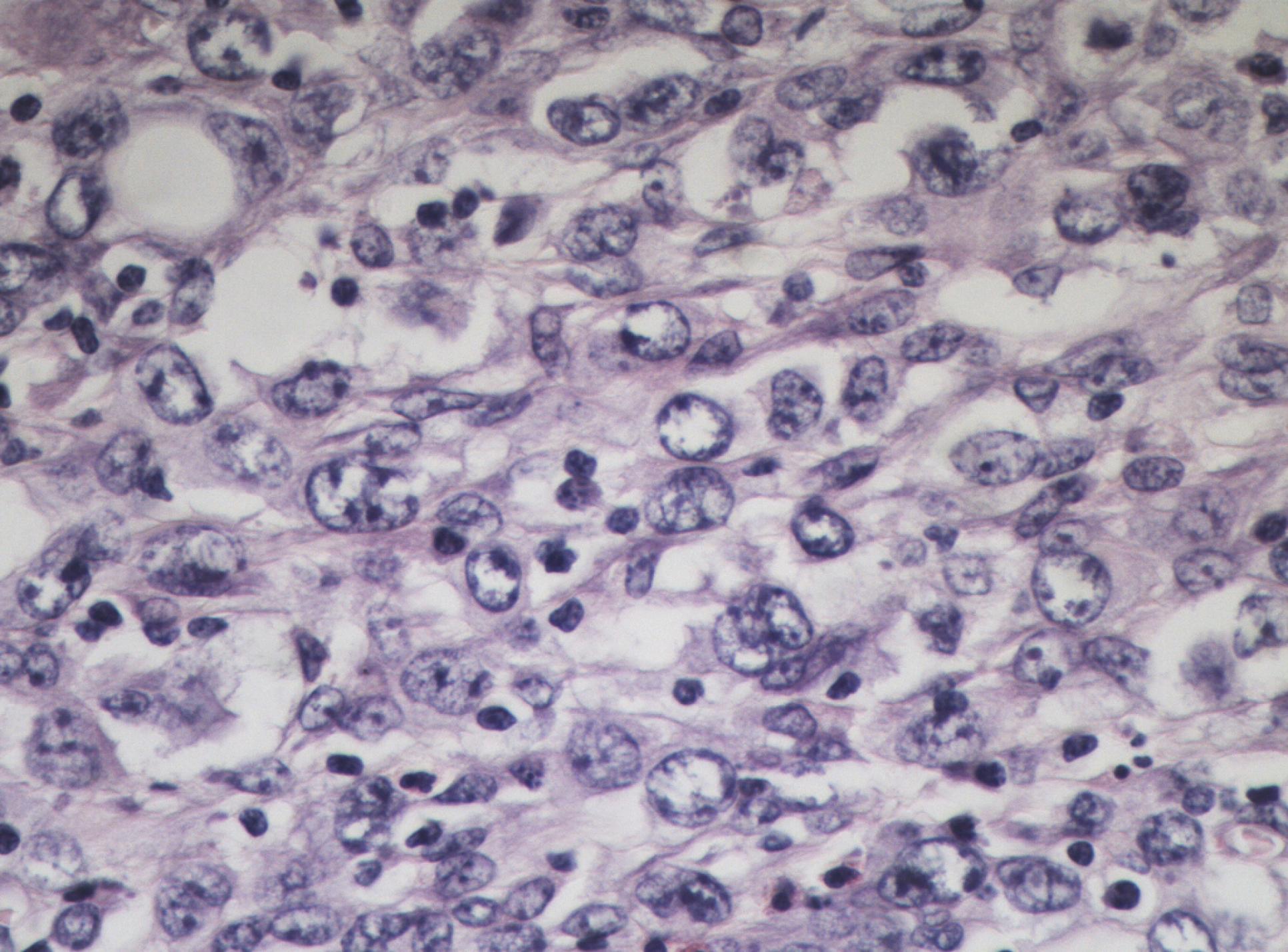
Diferenciación

- Capacidad de una célula neoplásica de parecerse a la que la originó, tanto funcional como morfológicamente.

Anaplasia

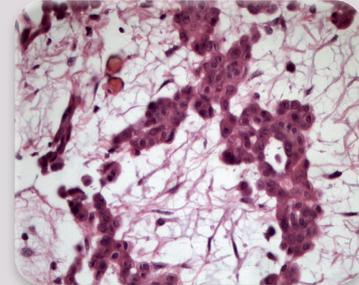
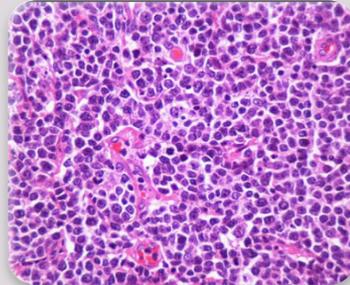
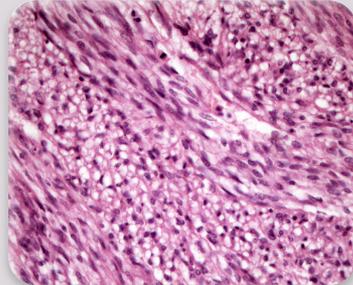
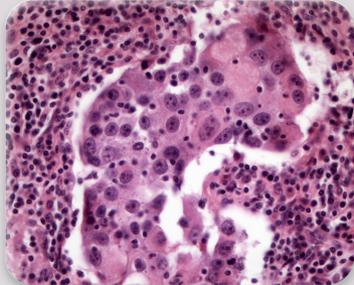
- Pérdida total de la diferenciación.







Clasificación de las Neoplasias Malignas



Epiteliales

- Adenocarcinomas
- Carcinomas Escamosos

Mesenquimáticas

- Tejido de origen + sufijo "sarcoma"

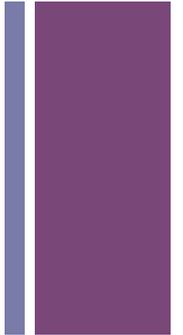
Hematolinfáticas

- Linfoma
- Leucemia

Otras Variedades:

- Melanomas
- Carcinomas Neuroendocrinos
- Mesoteliomas
- Etc.....

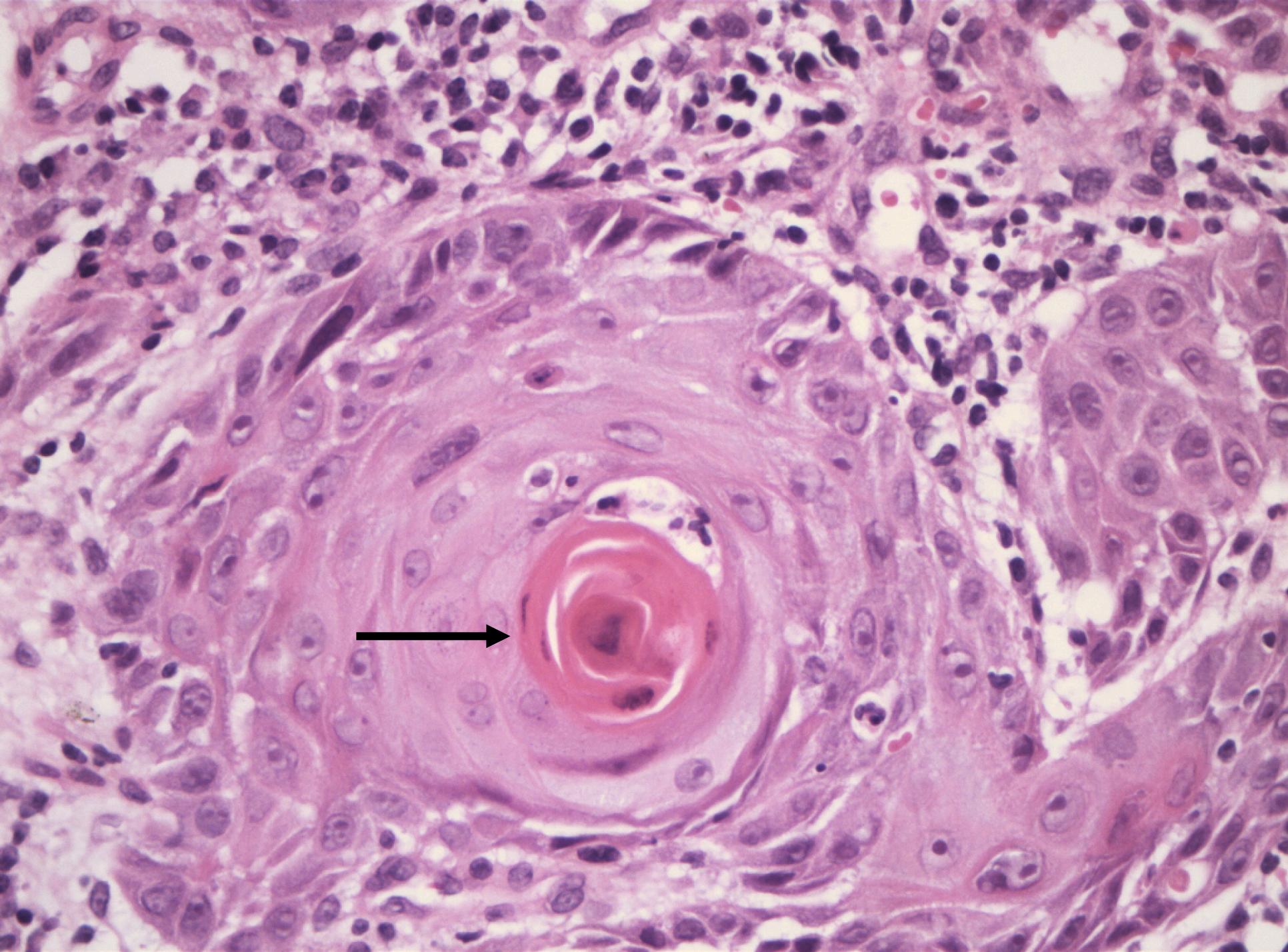
+ Carcinomas Escamosos



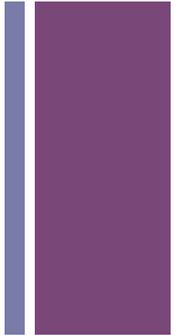
Grados de Diferenciación

Bien Diferenciado	Moderadamente Diferenciado	Mal Diferenciado
Perlas córneas Puentes intercelulares	Disqueratocitos	Escasas evidencias de queratinización

Evidencias de Queratinización



+ Adenocarcinomas



Grados de Diferenciación

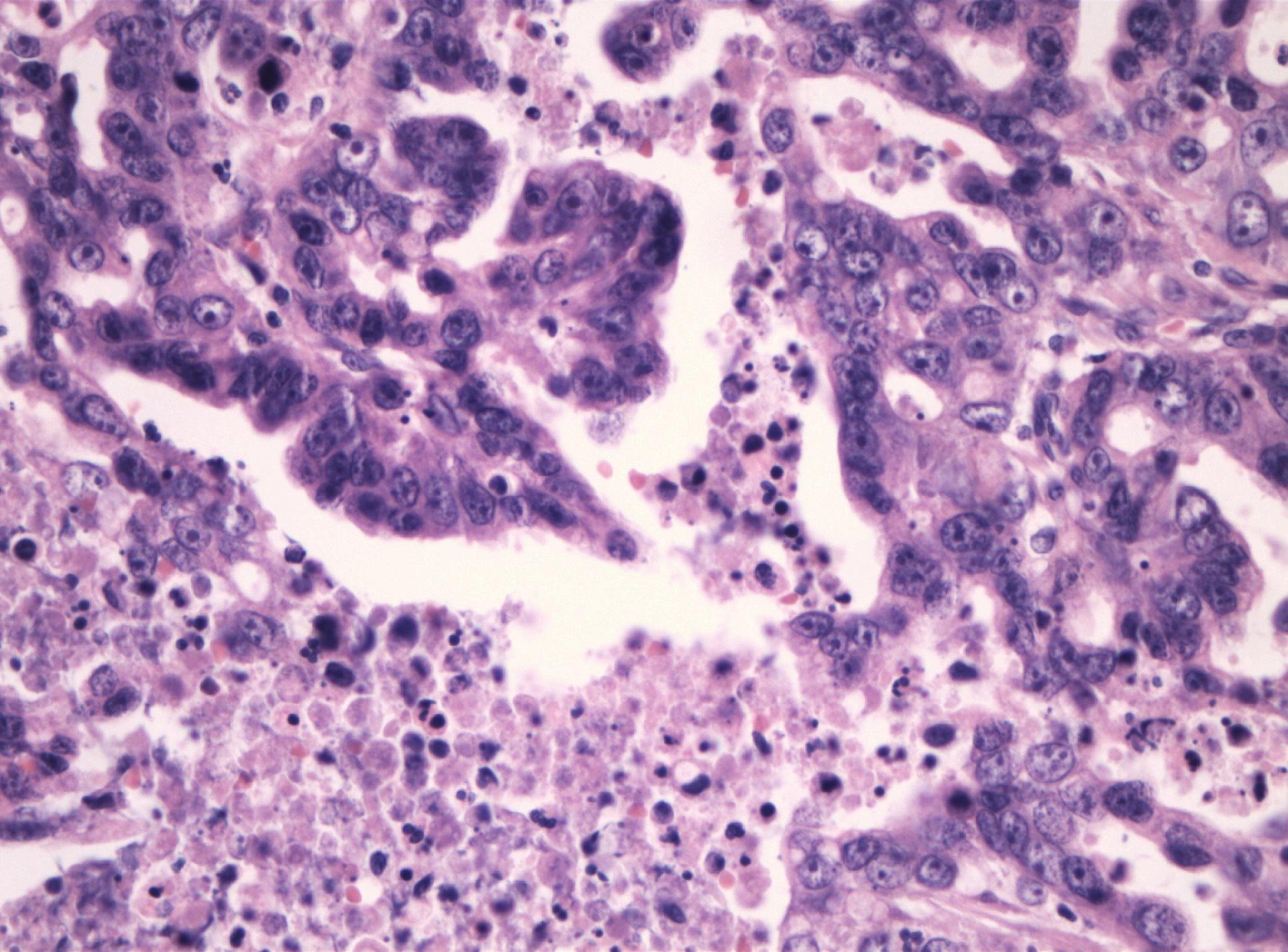
Bien Diferenciados

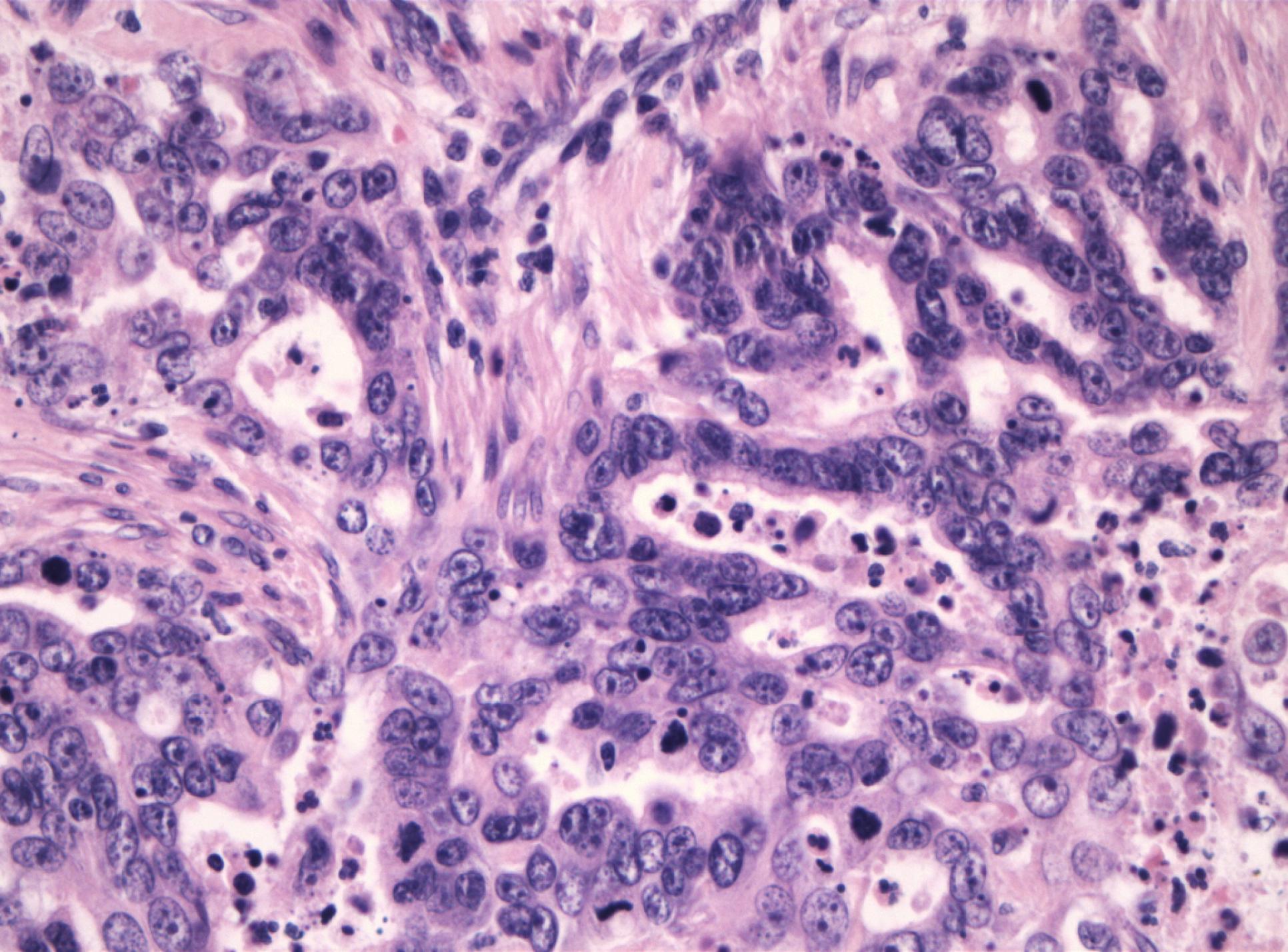
Mal Diferenciados

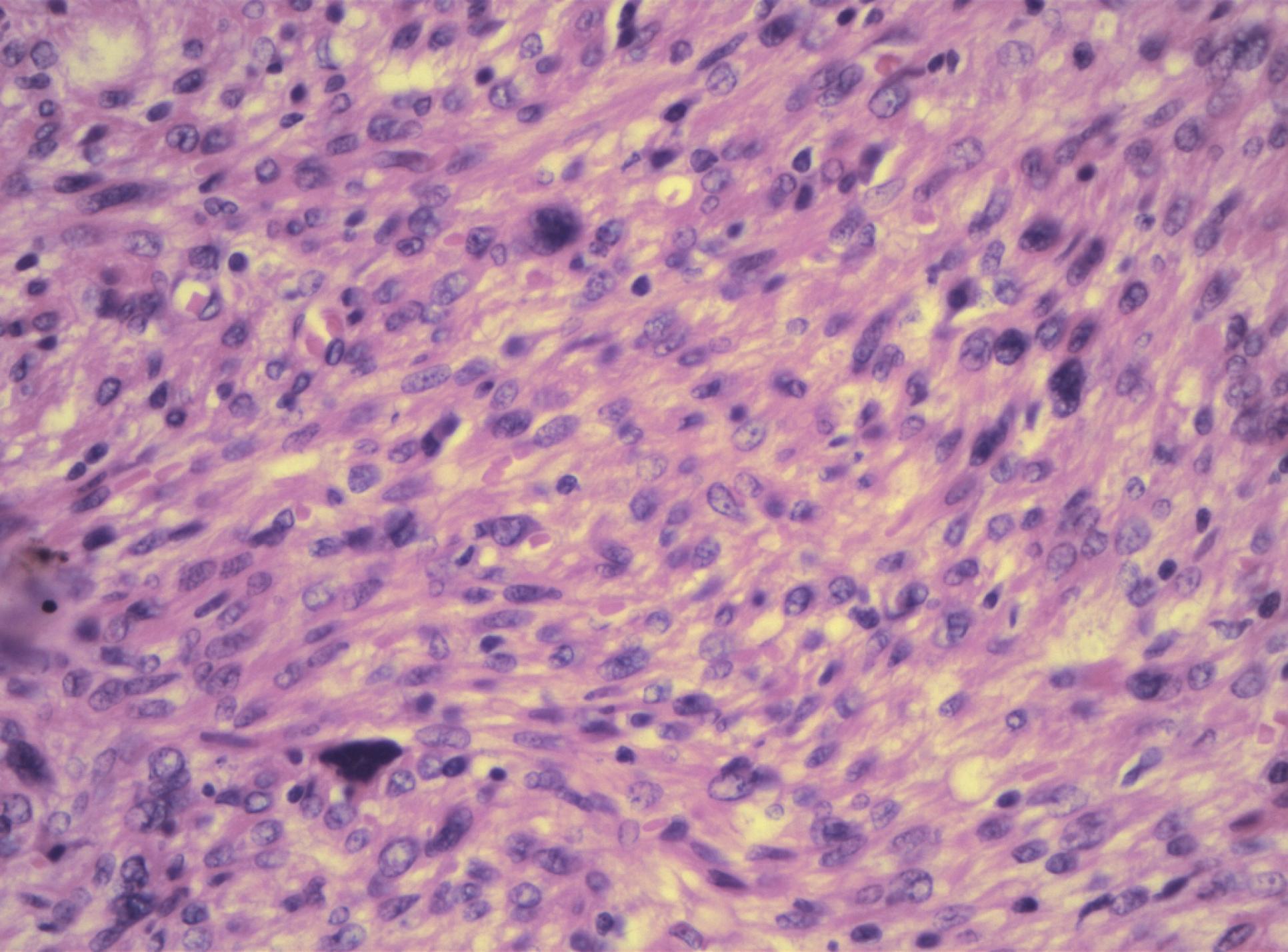
Papilas
Túbulos

Presencia de vacuolas
citoplasmáticas

Evidencias de Secreción



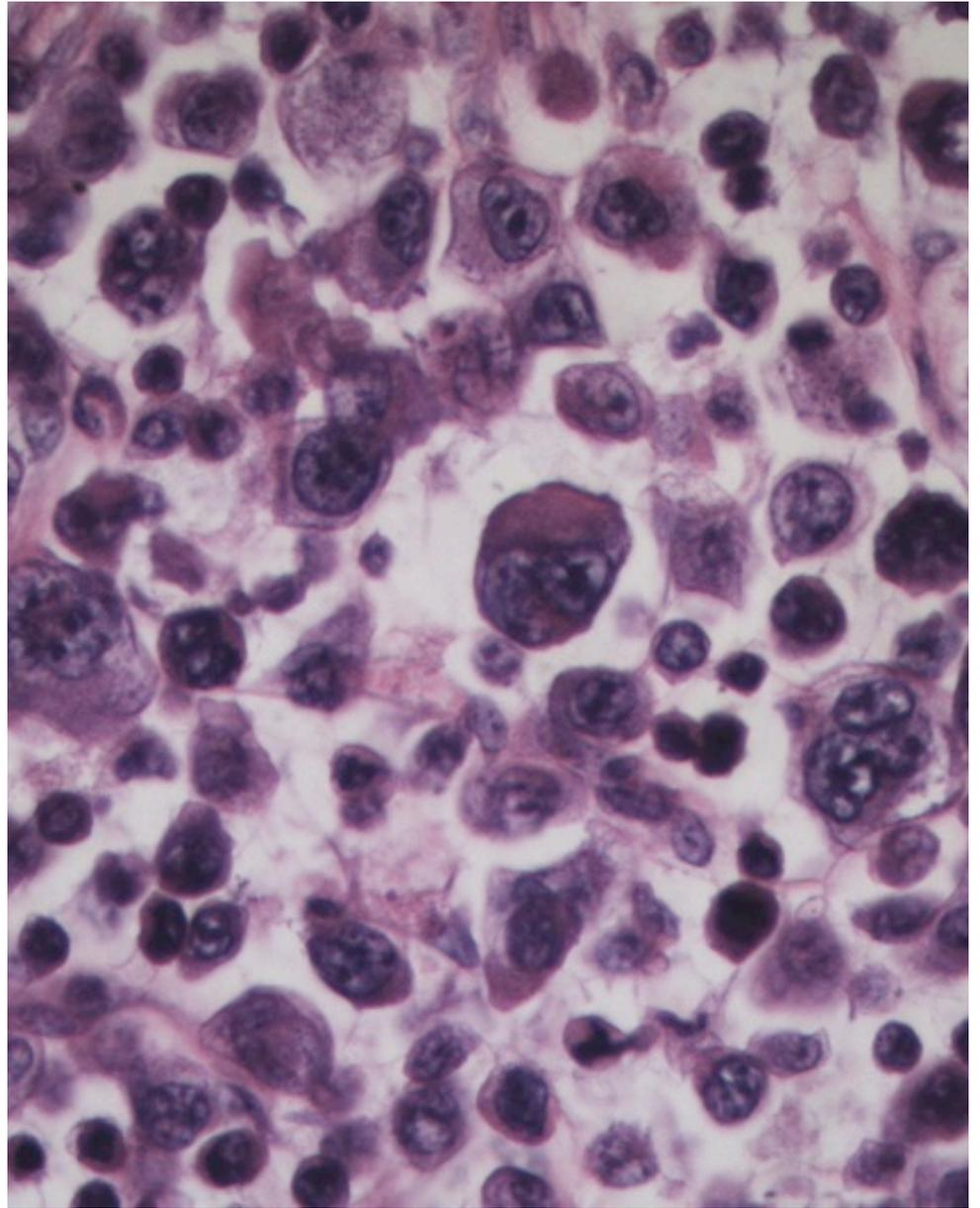






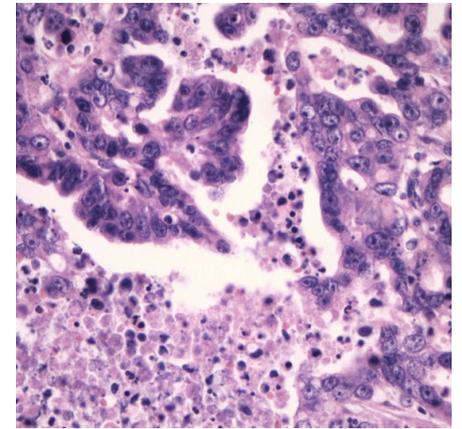
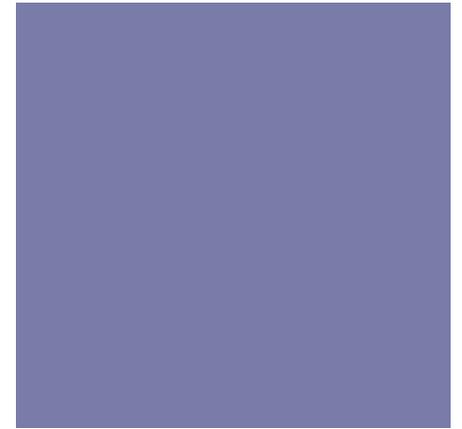
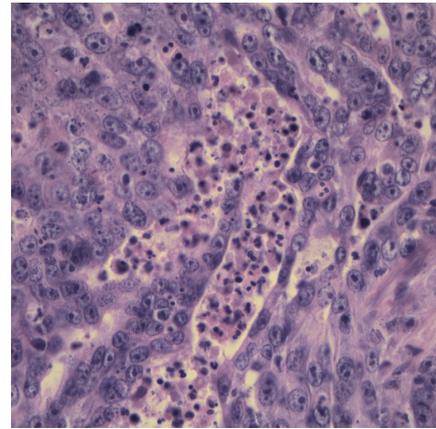
Concepto de Tumor Indiferenciado

Es aquel que posee un grado de anaplasia tan alto, que es imposible determinar su origen solo con criterios morfológicos, requiriendo estudios adicionales.





Neoplasias



Biología de las Neoplasias
Malignas



Evolución de las Neoplasias Malignas

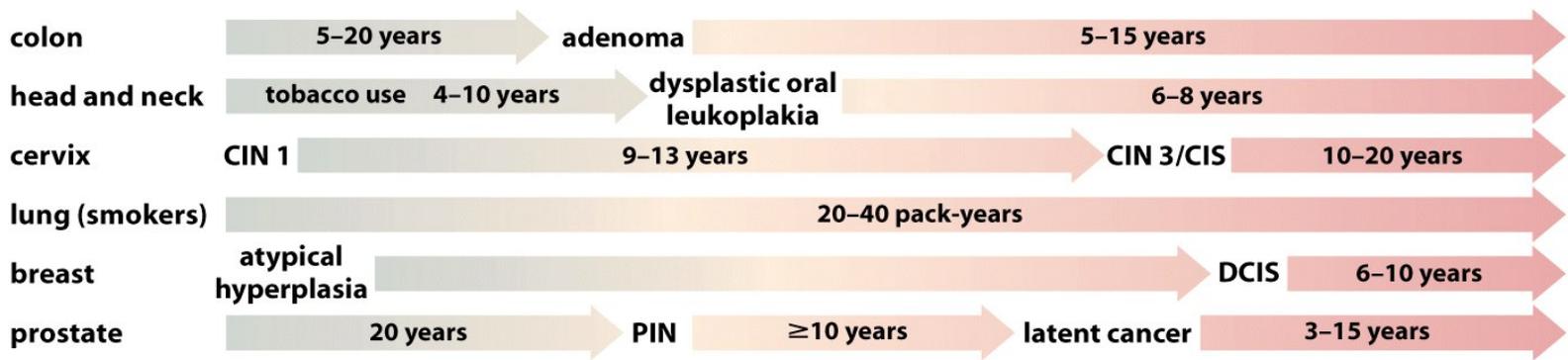
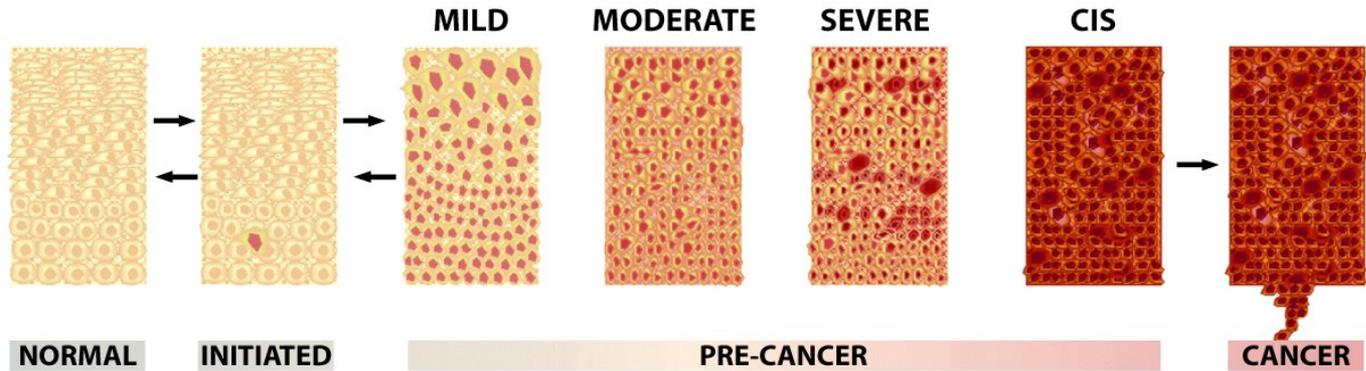
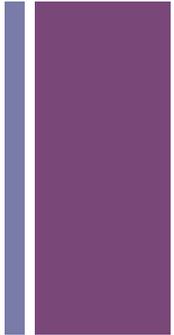


Figure 11-7 The Biology of Cancer (© Garland Science 2007)



Evolución de las Neoplasias Malignas

- Las neoplasias malignas de colon son el resultado de una sucesión de fenotipos intermedios progresivamente atípicos, que finaliza en la metástasis a distancia.

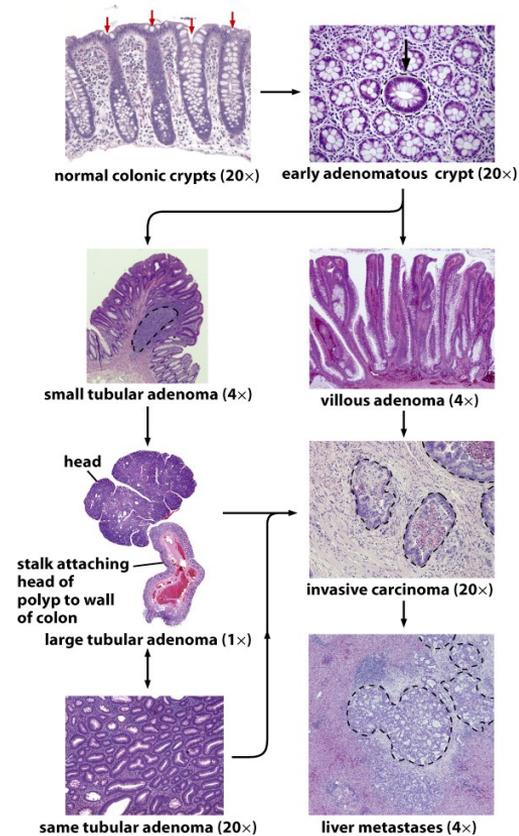
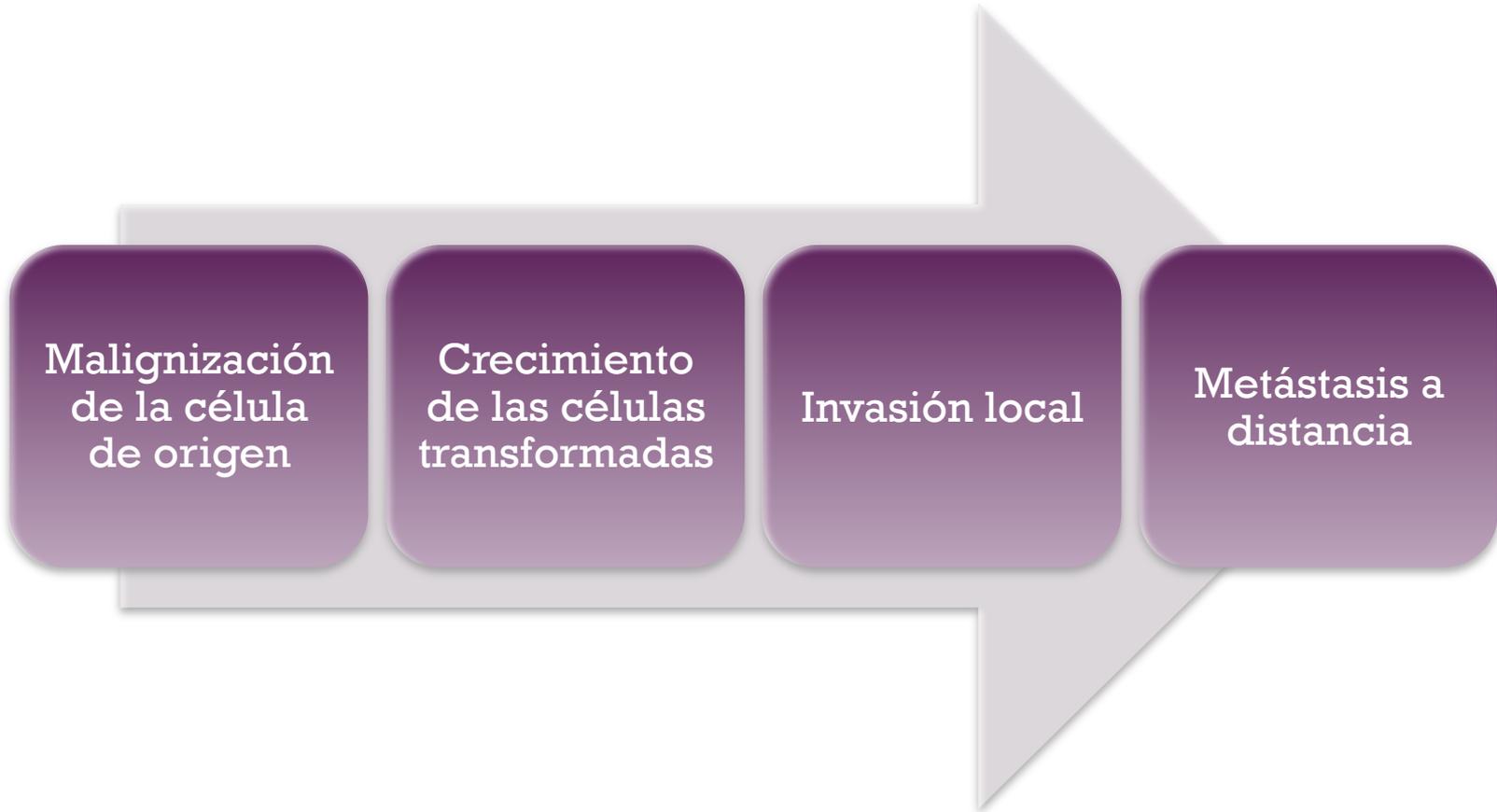
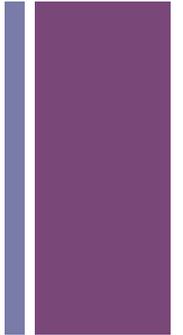


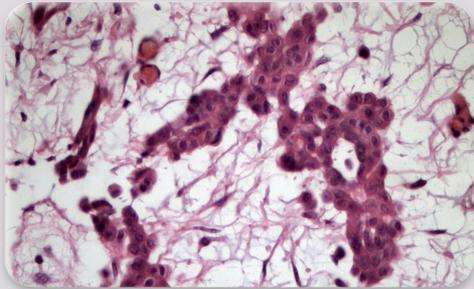
Figure 11-6 The Biology of Cancer (© Garland Science 2007)



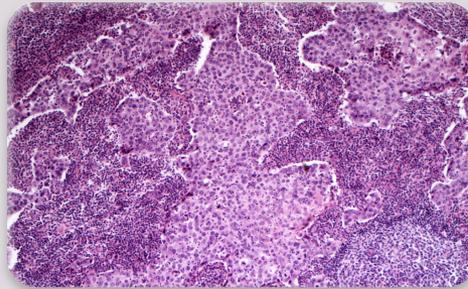
Evolución de las Neoplasias Malignas



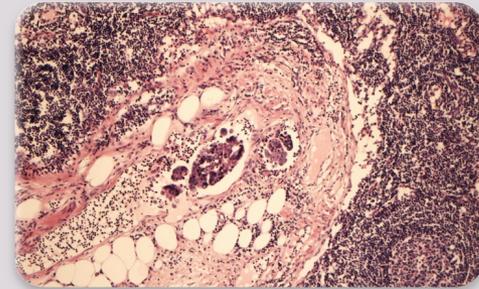
+ Vías de Diseminación



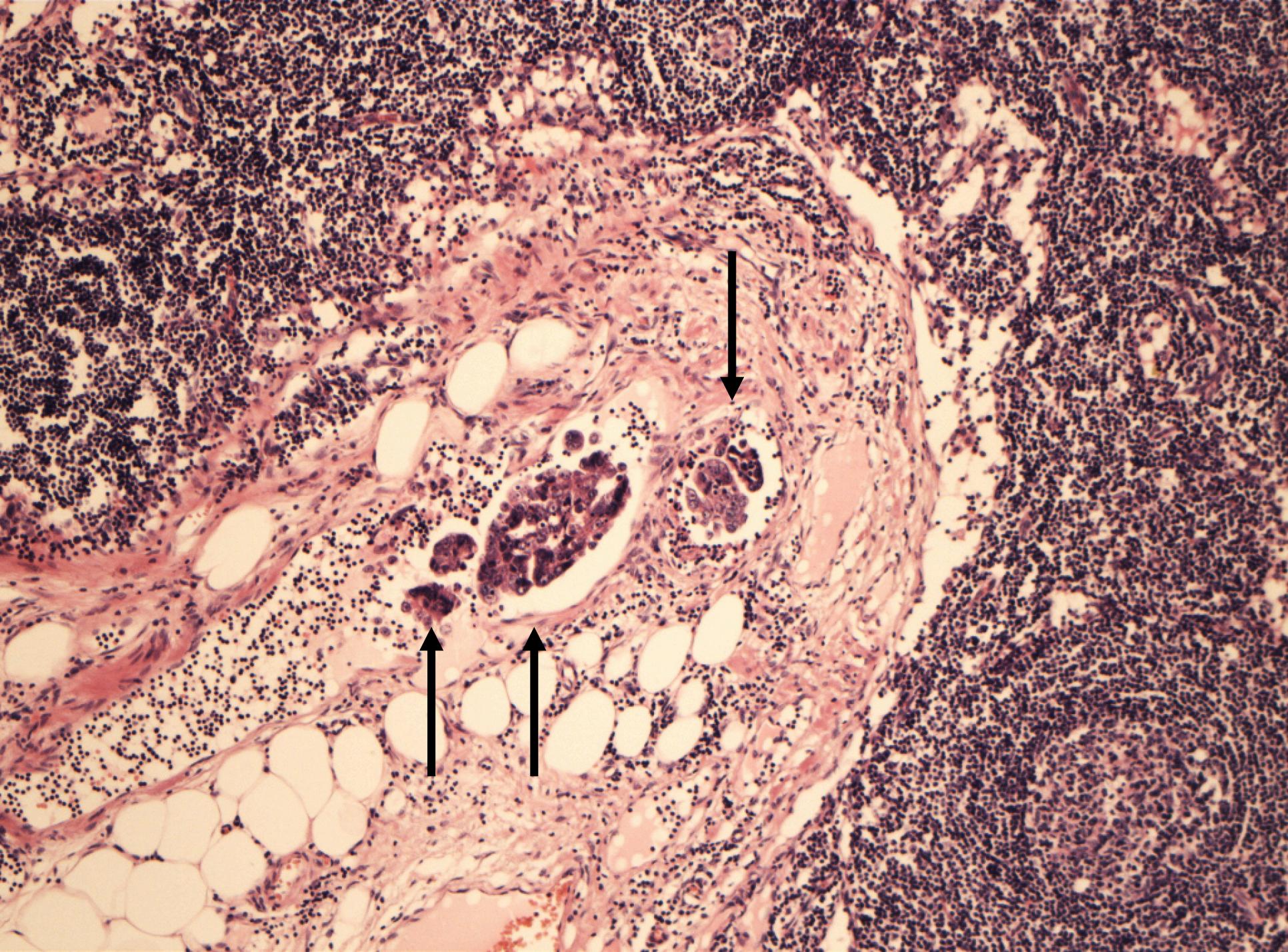
Implantes en
cavidades y
superficies
corporales

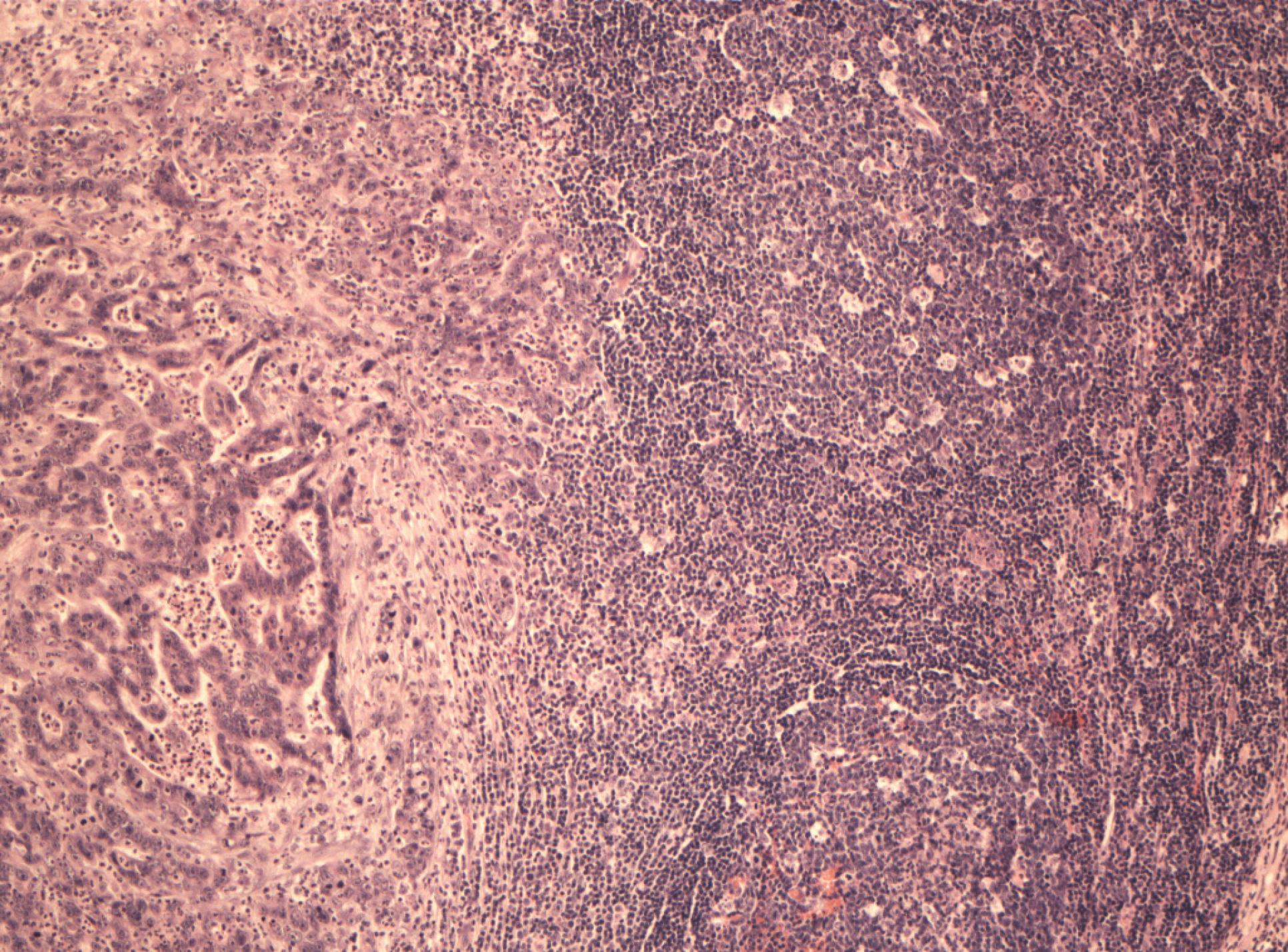


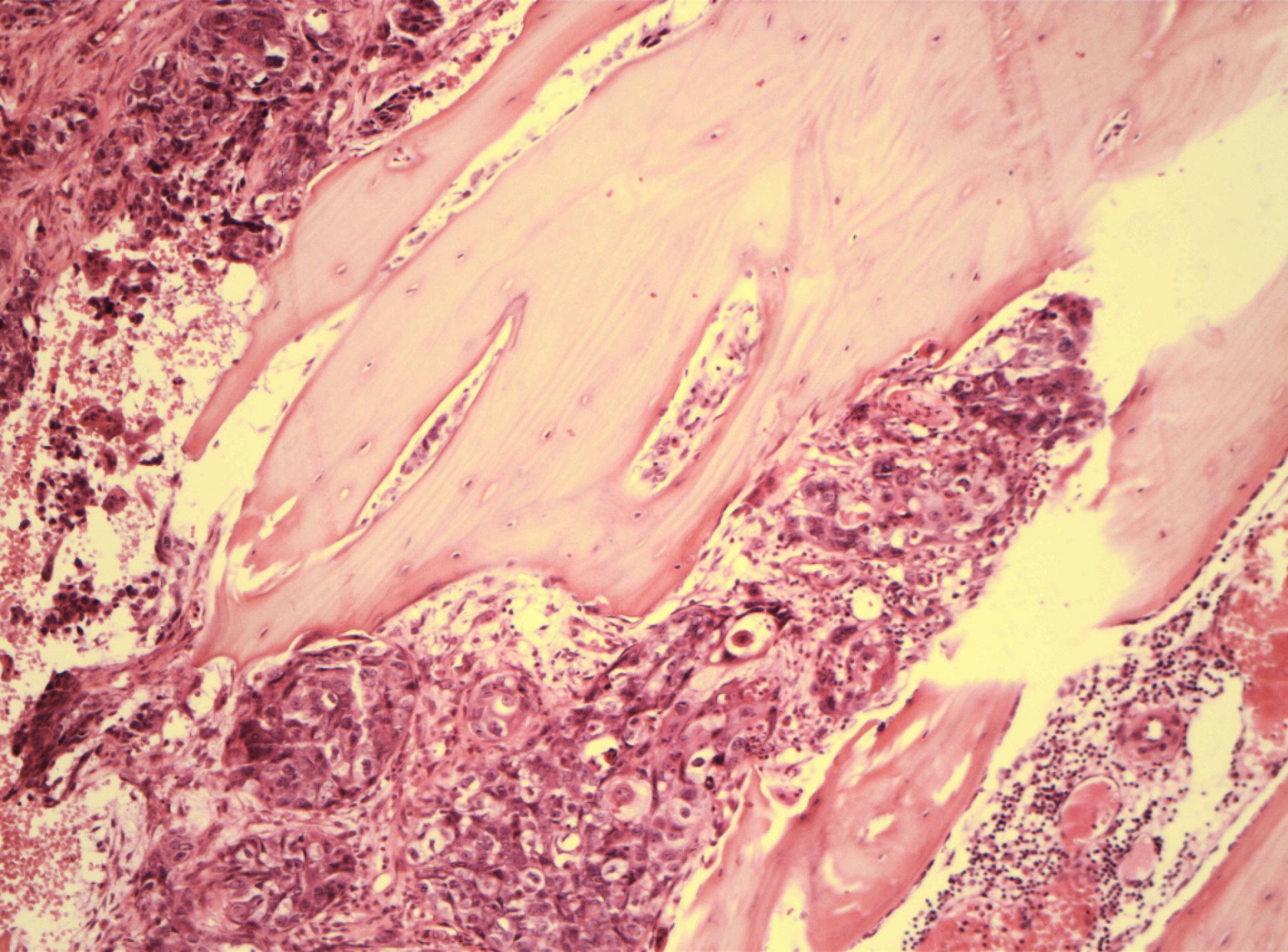
Linfática



Hematógena

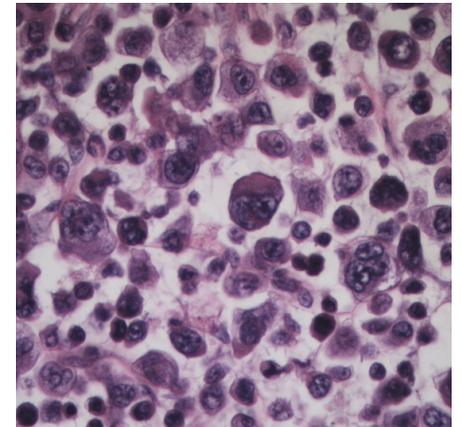
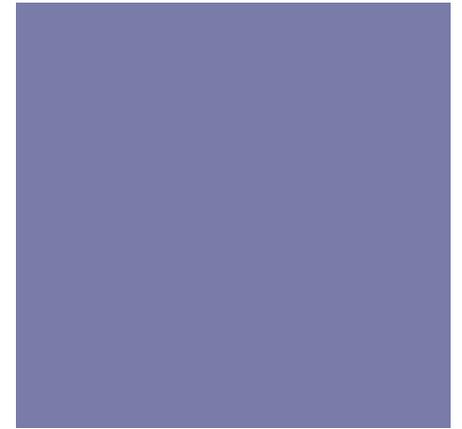
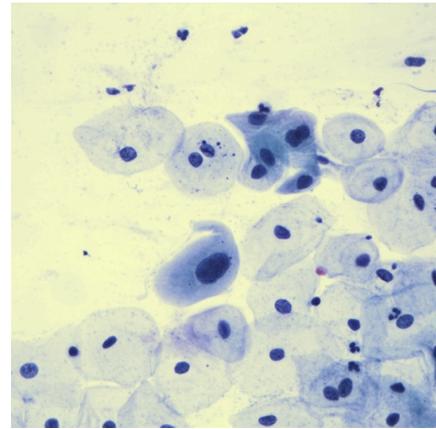




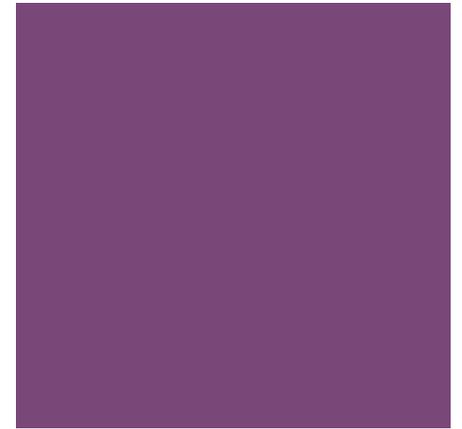
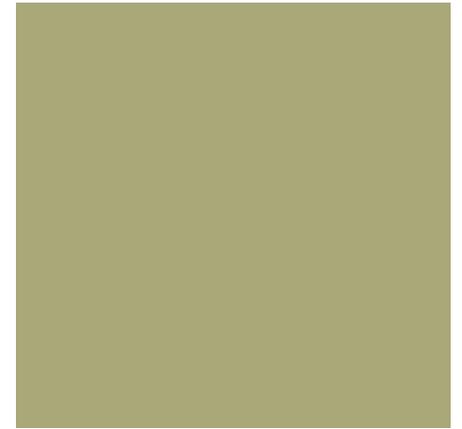
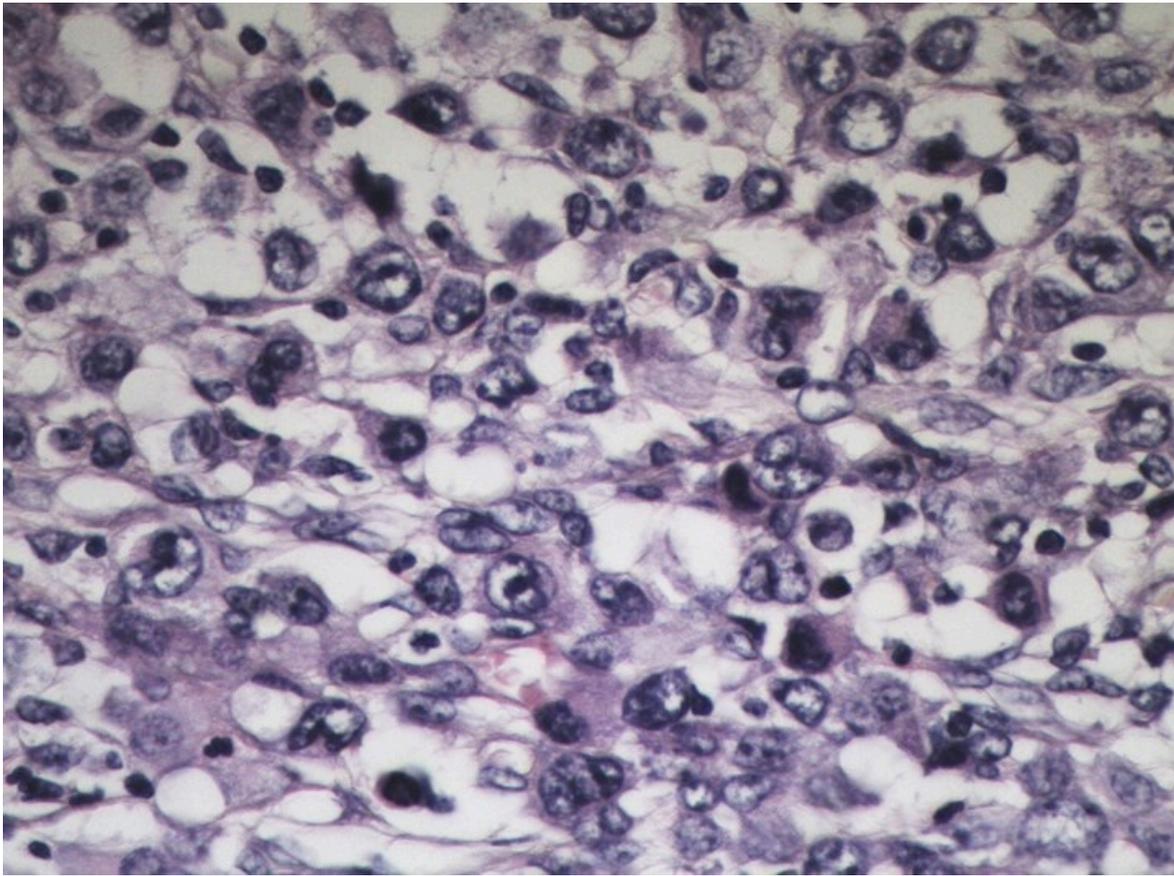




Neoplasias



Estudio de las Neoplasias

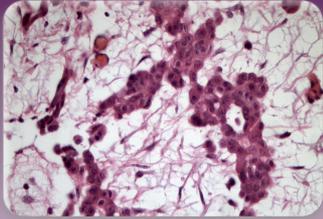


+ Grado Histológico

- Variación en forma y tamaño de las células neoplásicas.
- Número de células con figuras mitóticas.

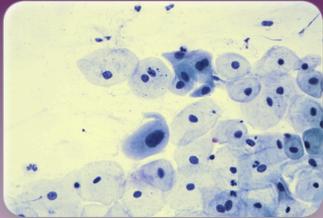


Grado Nuclear



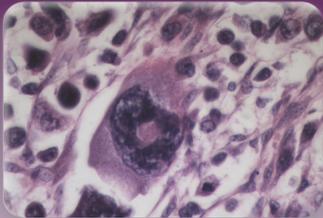
Grado Nuclear I

- Núcleos celulares bien diferenciados



Grado Nuclear II

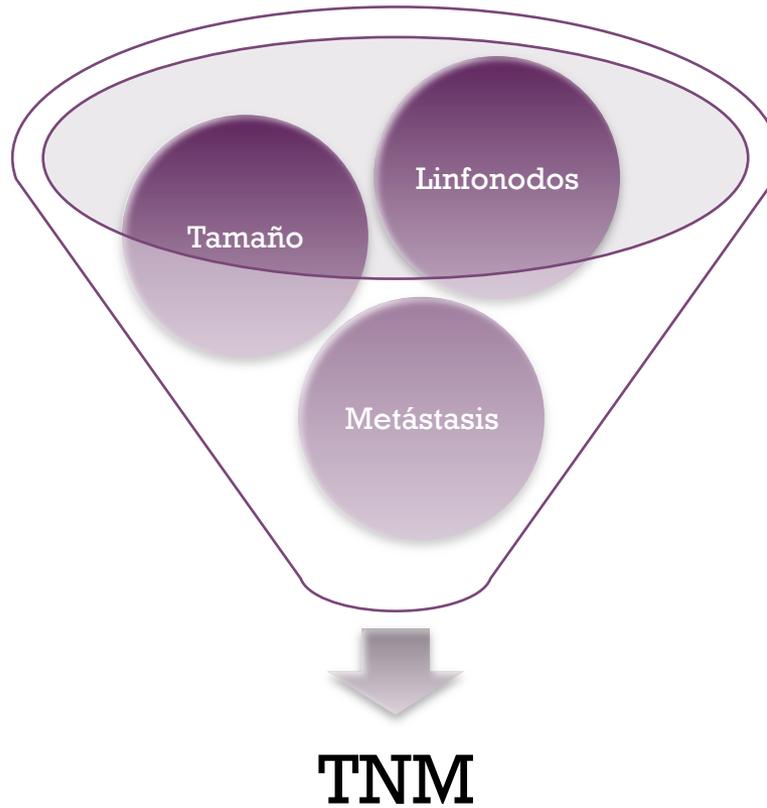
- Núcleos celulares moderadamente diferenciados



Grado Nuclear III

- Núcleos celulares mal diferenciados

+ Etapificación

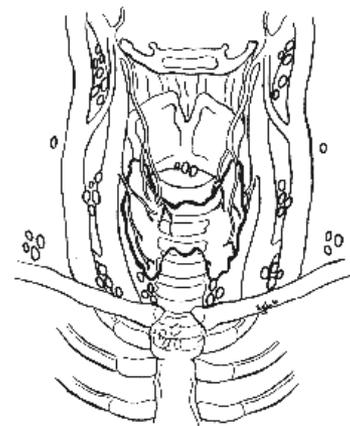


+ TNM

THYROID STAGING FORM		
CLINICAL <i>Extent of disease before any treatment</i>	STAGE CATEGORY DEFINITIONS	PATHOLOGIC <i>Extent of disease through completion of definitive surgery</i>
<input type="checkbox"/> y clinical – staging completed after neoadjuvant therapy but before subsequent surgery	TUMOR SIZE: _____ LATERALITY: <input type="checkbox"/> left <input type="checkbox"/> right <input type="checkbox"/> bilateral	<input type="checkbox"/> y pathologic – staging completed after neoadjuvant therapy AND subsequent surgery
PRIMARY TUMOR (T)		
All categories may be subdivided: (s) solitary tumor and (m) multifocal tumor (the largest determines the classification).		
<input type="checkbox"/> TX <input type="checkbox"/> T0 <input type="checkbox"/> T1 <input type="checkbox"/> T1a <input type="checkbox"/> T1b <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4a <input type="checkbox"/> T4b <input type="checkbox"/> T4c <input type="checkbox"/> T4d	Primary tumor cannot be assessed No evidence of primary tumor Tumor 2 cm or less in greatest dimension limited to the thyroid Tumor 1 cm or less, limited to the thyroid Tumor more than 1 cm but not more than 2 cm in greatest dimension, limited to the thyroid Tumor more than 2 cm but not more than 4 cm in greatest dimension, limited to the thyroid Tumor more than 4 cm in greatest dimension limited to the thyroid, or any tumor with minimal extrathyroid extension (e.g., extension to sternothyroid muscle or perithyroid soft tissues) Moderately advanced disease. Tumor of any size extending beyond the thyroid capsule to invade subcutaneous soft tissues, larynx, trachea, esophagus, or recurrent laryngeal nerve Very advanced disease. Tumor invades prevertebral fascia or encases carotid artery or mediastinal vessels All anaplastic carcinomas are considered T4 tumors Intrathyroidal anaplastic carcinoma Anaplastic carcinoma with gross extrathyroid extension	<input type="checkbox"/> TX <input type="checkbox"/> T0 <input type="checkbox"/> T1 <input type="checkbox"/> T1a <input type="checkbox"/> T1b <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4a <input type="checkbox"/> T4b <input type="checkbox"/> T4c <input type="checkbox"/> T4d
REGIONAL LYMPH NODES (N)		
Regional lymph nodes are the central compartment, lateral cervical, and upper mediastinal lymph nodes.		
<input type="checkbox"/> NX <input type="checkbox"/> N0 <input type="checkbox"/> N1 <input type="checkbox"/> N1a <input type="checkbox"/> N1b	Regional lymph nodes cannot be assessed. No regional lymph node metastasis Regional lymph node metastasis Metastasis to Level VI (pretracheal, paratracheal, and prelaryngeal/Delphian lymph nodes) Metastasis to unilateral, bilateral, or contralateral cervical (Levels I, II, III, IV or V) or retropharyngeal or superior mediastinal lymph nodes (Level VII)	<input type="checkbox"/> NX <input type="checkbox"/> N0 <input type="checkbox"/> N1 <input type="checkbox"/> N1a <input type="checkbox"/> N1b
DISTANT METASTASIS (M)		
<input type="checkbox"/> M0 <input type="checkbox"/> M1	No distant metastasis (no pathologic M0; use clinical M to complete stage group) Distant metastasis	<input type="checkbox"/> M1

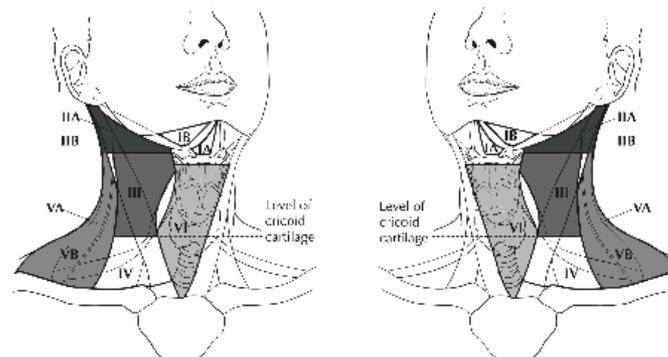
indicate on diagram primary tumor and regional nodes involved.

1.



2.

3.



+ La Biopsia

Informe

- Examen Macroscópico
- Examen Histológico

Diagnóstico

- Localización
- Márgenes quirúrgicos
- Tamaño
- Tipo Histológico
- Profundidad de la Infiltración
- Permeación Vascular
- Invasión Neural

