

ADAPTATION

Lecture-4

Dr. M. Tariq Javed

**Professor
Department of Pathology,
Faculty of Veterinary Science,
University of Agriculture, Faisalabad,
Pakistan.**

1

DYSPLASIA

- Abnormal changes in size, shape, organization of mature cells
- Cells still retain their tissue identity however (epithelial, muscle, nervous, connective)
- Pre-neoplastic change
- Cause is persistent injury and or irritation

2

- **Microscopically**

- There is cell atypia and disorderliness.
- Loss of uniformity of the individual cells and loss of architectural orientation.
- Cellular atypia is characterized by pleomorphism and hyperchromasia
- Mitotic figures are seen in abundant cells.

3

Dysplasia

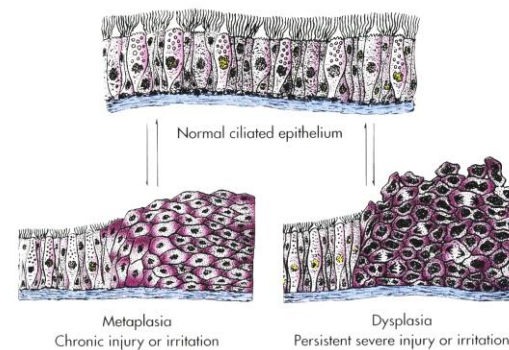


Fig. 3-3 Reversible changes in cells lining the bronchi.

4

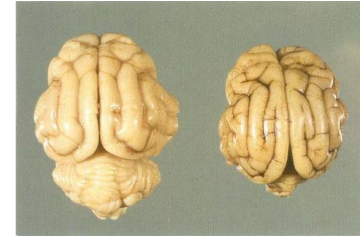
- **Grossly**

- No much can be appreciated grossly

5

HYPOPLASIA

- Failure of an organ to reach its normal full adult size.
- It is arrested growth.
- Examples include renal hypoplasia and Cerebellar hypoplasia



11-5 Cerebellar hypoplasia
Markedly smaller cerebellum (right) in comparison with normal (left). Hypoplasia due to interference of normal development by selective destruction of external germinal layer by the panleukopenia virus during perinatal growth. Kitten.

6

- The causes include,

- genetic mutations (hereditary), and
- deletion of critical cell population during development, may be in utero, due to certain viruses, toxins and irradiation.
- Hypoplasia of kidney, pituitary and pancreas can occur spontaneously and is hereditary.

7

- **Microscopically**

- Fewer cells than normal
- Size of cells may also be small

8

- **Grossly**

- Smaller than normal organ

9

APLASIA

- Failure to grow -- rudimentary organ.
- This is abnormality in growth which may be genetic.
- Haematologist use the term where the bone marrow undergoes destruction – **Aplastic anaemia**
 - There is no regeneration and no new blood cell formation

10

- **Grossly**

- Absence of or rudimentary organ

11

NEOPLASIA

FUTURE CHAPTER

12

References:

1. Kumar, V., Abbas, AK, Fausto, N, Aster, JC, 2010. Robbins and Cotran Pathologic Basis of Disease. 8th Ed. ISBN: 978-1-4160-3121-5, Copyright © 2010 by Saunders, an imprint of Elsevier Inc.
2. Manual on meat inspection for developing countries, FAO.
3. <http://en.wikipedia.org/wiki/Cardiology>
4. http://maxshouse.com/Cardiology/myocardial_diseases_of_the_cat.htm
5. <http://en.wikipedia.org/wiki/Goitre>
6. http://www.mypetsdentist.com/site/view/147079_Gingivalhyperplasia.pml
7. <http://pathol.med.stu.edu.cn/pathol/listEngContent2.aspx?ContentID=460>

13

MESSAGE

SPREAD HAPPINESS
ELIMINATE ANGER



ONE WORLD
ONE RACE

M. Tariq Javed

14