

**Case #1** The images from this case come from a 45 y/o female with a soft palate mass that was excised. Representative images are shown. Based on the location & histology, all of the following are true EXCEPT, regarding the most likely diagnosis:

- A. Occurs most commonly in adult females
- B. May have tubular, cribriform, papillary, or solid patterns
- C. Has > 95% survival rate
- D. The most common carcinoma in this location

Answer: D. This case represents Polymorphous low-grade adenocarcinoma. All of the answers are true except for D. Adenoid cystic carcinoma is the most common carcinoma in this location, but this is the most common location for polymorphous low-grade adenocarcinoma. (Rosai, Page 260-261) *Test taking strategy* – If you are not sure of the diagnosis by the images alone (which will often be the case), use the answers to help guide you to the right answer. Three of the 4 answers are correct, so they can assist in narrowing down the likely diagnosis.

**Case #2** The images in this case come from a 45 y/o female with a cervical mass. The patient is obese, and further physical exam is difficult. No imaging studies were available. An excision was performed. Representative images from the cervix are shown. Which of the following is the best diagnosis?

- A. Mucinous adenocarcinoma of the cervix
- B. Conventional adenocarcinoma of the cervix
- C. Adenoma malignum
- D. Endometrial adenocarcinoma
- E. Minimal deviation adenocarcinoma of the cervix

Answer: B. This case illustrates a conventional adenocarcinoma of the cervix. This can be very difficult to differentiate from endometrial carcinoma. Imaging and physical exam can be helpful, as can special stains (discussed in the next question). Adenoma malignum and minimal deviation adenocarcinoma are synonymous terms. Mucinous adenocarcinoma of the cervix would have mucin, which is not seen in this case. *Test taking strategy* – In this case one could argue that it is not possible to differentiate between a primary endometrial carcinoma with cervical extension and a primary cervical carcinoma. This would be a true statement, but given that there is no evidence given in the history or support from special stains the leading differential (i.e. best answer) should remain with a cervical primary. (Rosai, pages 1540-1543)

**Question #1** All of the following support the diagnosis of a primary cervical adenocarcinoma over an endometrial carcinoma EXCEPT:

- A. CEA positivity
- B. Vimentin negativity
- C. ER/PR weakly positive
- D. HPV positive by in situ hybridization
- E. CK7 negative

Answer: E. CK7, CK 20, 34-Beta-E12, and EMA have no diagnostic utility in differentiating endometrial and cervix adenocarcinoma. CEA, Mucin, Vimentin, ER/PR, and HPV (ISH) may be helpful. (Rosai, page 1541)

**Question #2** Which of the following HPV types are most commonly associated with lesions of glandular origin?

- A. HPV 11
- B. HPV 16
- C. HPV 18
- D. HPV 33
- E. HPV 52

Answer: C. HPV 18 is associated with lesions of glandular and neuroendocrine differentiation. (Best Pract Res Clin Obstet Gynaecol 2006;20:253)

**Question #3** Which of the following are considered low risk HPV subtypes?

- A. HPV 6
- B. HPV 33
- C. HPV 11
- D. Both A & C
- E. All of the above

Answer: D. HPV types 6 and 11 are considered low risk. There are many high-risk HPV types. Some of the more popular to know include: types 16, 18, 31, 33, and 52.

**Question #4** During the process of malignant transformation, which HPV protein interacts with p53?

- A. HPV E6
- B. HPV E7
- C. HPV E8
- D. HPV E9
- E. HPV E10

Answer: A. HPV E6 protein interacts with the p53 protein in the cell and results in rapid proteolytic degradation. E6 (binds to p53) and E7 (binds to Rb protein) are the two primary transforming agents of the high-risk HPV types. E6 and E7 act in a synergistic manner, although E7 is thought to be the major contributor to malignant transformation. (Kurman, pages 267-273)

**Case #3** A nodule in the lower jaw was identified in a 35 y/o Masai male. A biopsy was performed and representative images are shown. Based on the morphology, what is the best diagnosis?

- A. Basal cell carcinoma
- B. Peripheral Ameloblastoma
- C. Adenomatoid odontogenic tumor
- D. Ameloblastic odontoma
- E. Calcifying epithelial odontogenic tumor

Answer: B. This case illustrates a peripheral ameloblastoma that appears to arise from the basal layer of the gingival mucosa. Usually ameloblastomas are thought of arising from around teeth, which they usually do. However, they can also arise from the basal layer of the squamous mucosa, usually the gingival mucosa. Morphologically, they are indistinguishable from each other. They can be mistaken for basal cell carcinomas, particularly if the biopsy is superficial. The location should raise suspicion of a peripheral ameloblastoma, as one is about to diagnose a basal cell carcinoma on a mucosal surface. (Rosai, pages 261-262 and 279-296)

**Case #4** A 29 y/o Kikuyu female presented to the hospital with massive vaginal bleeding and an abdominal mass. At surgery a hysterectomy with abdominal tumor debulking was performed. Based on the images for this case, what is the best diagnosis?

- A. Epithelioid trophoblastic tumor
- B. Complete mole
- C. Choriocarcinoma
- D. Partial mole
- E. Ectopic pregnancy with rupture

Answer: C. This case illustrates choriocarcinoma. Note the admixture of syncytiotrophoblasts and cytotrophoblasts required to make the diagnosis. A preceding complete molar pregnancy carries the highest risk for development (approximately 1-2%). (Rosai, pages 1744-46)

**Question #5** Choriocarcinoma is most commonly preceded by which of the following?

- A. Seminoma
- B. Complete hydatidiform mole
- C. Partial hydatidiform mole
- D. Ectopic pregnancy
- E. Term pregnancy

Answer: B. Choriocarcinoma is thought to occur following approximately 1-2% of complete molar pregnancies. It has been documented to follow answers B – E. Seminoma was included to make the point that syncytiotrophoblastic giant cells (which stain with beta-HCG) can be seen in cases of seminoma, and should not be confused with a component of choriocarcinoma. (Rosai, pages 1745-47)

**Question #6** Which of the following is at the highest risk for developing choriocarcinoma?

- A. Women group A – Man group A
- B. Women group O – Man group O
- C. Woman group O – Man group AB
- D. Woman group AB – Man group O
- E. None of the above, they all have the same risk

Answer: A. Women who are group A and married to men who are also group A have a relative risk of 10.4:1 to develop choriocarcinoma. This is a very interesting factoid, which can make good test questions. (Rosai, page 1744)

References:

*Rosai and Ackerman's Surgical Pathology*. Rosai J, 9<sup>th</sup> Ed. 2004.

*Blaustein's PATHOLOGY of the FEMALE GENITAL TRACT*. Kurman, RJ, et al. Fifth Edition. 2002.

**Notes for question set:**<sup>1</sup>

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