

Significance of Histological Characterization of Adenomatous Nipple

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Background

Nipple adenomas are a rare, benign neoplasm of the breast occurring primarily in middle aged women. Unusual presentation has been documented in children and men. Proliferation of lactiferous ducts of the nipple is a defining feature. Presentation can range from persistent nipple erythema to an ulcerative, hemorrhagic and plaque-like or nodular lesion. Serous discharge is sometimes noted, which can be an initial clinical symptom. Although the tumor is a benign occurrence, its presence has been noted in many female cases to occur in concordance with an underlying contralateral, as well as ipsilateral, breast carcinoma. Malignant transformation of the neoplasm itself is extremely rare.

Case Information

A 49-year-old Latin American female presented to clinic with a two-year history of a painful and hemorrhagic nipple. Upon examination, the nipple had an erythematous and ulcerated appearance with a hemorrhagic discharge. The patient underwent an MRI which showed increased vascularity to the area. Subsequently, a punch biopsy was performed. Following the results of the biopsy, the patient opted for a complete nipple excision.

Case Information

Gross Examination:

The specimen was received as an oriented ellipse. The specimen was arbitrarily designated as a clockface.

A short suture marked the superior aspect (12 o'clock) and a long suture marked the lateral aspect (3 o'clock). The 12-3-6 margin was inked red while the 6-9-12 margin was inked blue. The deep margin was inked black and the ductal margin was inked yellow and submitted en face. Opposing tips (12 and 6 o'clock) were removed and submitted separately. The remainder of the specimen was serially sectioned and submitted entirely.

Microscopic Diagnosis:

Histological examination proved to diagnose the lesion as a nipple adenoma; mixed proliferative type. Papillary architecture and dilated ducts are prominent histological features. Ductal hyperplasia and extensive skin ulceration are also noted and are detailed criteria for diagnosis. Hemorrhage can be seen near the opening of the duct, which correlates to the gross appearance.

Images



Figure 1: Macroscopic features of nipple adenoma

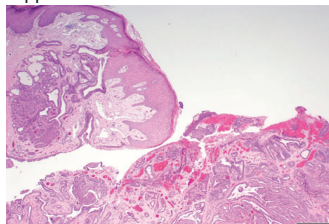


Figure 2: Histological section showing ulceration and hemorrhage

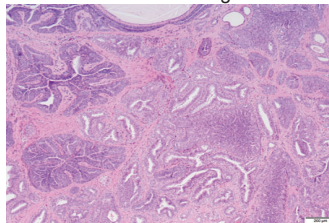


Figure 3: Histological section showing papillary architecture

Implications/Discussion

A complete characterization is extremely important in cases such as this. Nipple adenomas can grossly and histologically mimic Mammary Paget's Disease (MPD). The clinical management of nipple adenoma and Mammary Paget's Disease are drastically different and have massively opposing effects on the patient. Accurate patient prognosis is dependent upon correct diagnosis. The pathologist must take care to not underdiagnose what is MPD and not over diagnosis what is a nipple adenoma.

Differential Diagnosis:

Immunohistochemical staining is a reliable method to determine the disease process under question. Cytokeratin 7, GATA3 and HER2 are immuno stains indicative of Mammary Paget's Disease. These stains are immunoreactive in a majority of MPD cases and can be used to rule out benign adenomas. Dermoscopy is proving to be another accurate, less invasive tool to differentiate which disease process is present.

This allows the clinician to visually inspect the lesion for suspicious characteristics.

A definitive link between nipple adenomas and an underlying breast carcinoma has not been exclusively defined but it also cannot be excluded. This finding prompts continued follow-up care for patients to ensure malignancy does not ensue.

References

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