A 55-year-old female presented to an outside hospital with a left neck mass. Thyroid ultrasound confirmed a 4.4 centimeter (cm) left lower pole nodule, as well as a 0.7 cm right superior pole nodule. Fine needle aspiration (FNA) biopsy of the larger nodule revealed follicular neoplasm. Per patient preference, total thyroidectomy was performed. No extrathyroidal extension or central neck lymphadenopathy was noted intraoperatively. Pathology of both nodules revealed encapsulated FVPTC, with focal capsular invasion noted of the larger nodule. No lymphovascular invasion or extrathyroidal extension was evident on pathologic examination of the specimen. She did not receive radioactive iodine or genetic sequencing at that time.

Approximately 2.5 years later, she presented to our institution with subacute onset of left greater than right proximal lower extremity weakness and posterior cervical discomfort. Imaging revealed a mass involving the posterior elements of T1 with epidural compression of the spinal cord. She underwent CT-T2 laminectomy, and pathology analysis confirmed metastatic FVPTC. She was treated with radiation therapy, 30 Gy in 10 fractions, to the T1 region and surrounding tissue, as well as 155 mCi of 131I radioactive iodine. Nine months after initial spine surgery, she began experiencing lower back pain and increasing thyroglobulin levels. Imaging revealed a metastatic lesion at L3, and she received further radiation. Her thyroglobulin levels returned to <5, and she was initiated on denosumab. Two years later, her thyroglobulin level is 2.9 and her PET/CT shows no evidence of metastatic disease.

INTRODUCTION
Recently, follicular variant of papillary thyroid cancer (FVPTC) encapsulated without invasion has been reclassified as noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP). It is postulated that FVPTC with capsule-only (no vascular) invasion similarly portends an excellent disease-free survival post-thyroidectomy.

CASE REPORT
A 55-year-old female presented to an outside hospital with a left neck mass. Thyroid ultrasound confirmed a 4.4 centimeter (cm) left lower pole nodule, as well as a 0.7 cm right superior pole nodule. Fine needle aspiration (FNA) biopsy of the larger nodule revealed follicular neoplasm. Per patient preference, total thyroidectomy was performed. No extrathyroidal extension or central neck lymphadenopathy was noted intraoperatively. Pathology of both nodules revealed encapsulated FVPTC, with focal capsular invasion noted of the larger nodule. No lymphovascular invasion or extrathyroidal extension was evident on pathologic examination of the specimen. She did not receive radioactive iodine or genetic sequencing at that time.

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IMAGING
Thyroid ultrasound, sagittal, left thyroid lobe, containing a large solid heterogenous nodule measuring 46 x 35 x 34 mm containing vascularity and foci of calcification.

DISCUSSION AND CONCLUSIONS
Follicular variant papillary thyroid carcinoma (FVPTC) encompasses follicular variant, encapsulated with invasion (encompassing capsular invasion with and without vascular invasion) as well as follicular variant, infiltrative. Follicular variant, encapsulated without invasion is now termed Noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP) given its low malignant potential. Whereas follicular variant, infiltrative demonstrates a prevalence for BRAF > RAS mutation and is suggested to exhibit a genetic and clinical profile similar to classical papillary thyroid carcinoma (cPTC), follicular variant encapsulated with invasion more closely mirrors clinical and genetic profiles of follicular thyroid carcinoma, with RAS and PAHX-PRARG mutations more common. They exhibit less frequent spread to local lymphatics, although they do often exhibit responsiveness to radioiodine. (1-3) Reports detail encapsulated FVPTC either presenting with bone metastases at time of diagnosis or later after thyroidectomy. Generally, vascular invasion is ultimately demonstrated on pathology review. (4) According to the 2015 ATA guidelines, follicular thyroid carcinoma (FTC) with capsular-only invasion is designated as minimally invasive and low-risk. (5) Multiple retrospective studies have illustrated -free survival rates of 97-100% at 3-10 years for capsular-only invasive FTC after thyroidectomy. (6-7) Such a distinction between capsule only invasive FVPTC and capsule and vascular invasive FVPTC does not exist in current guidelines. Our case is significant as pathology demonstrated FVPTC with capsule-only invasion and absence of any discernable vascular invasion, but with late development of bony metastases. Especially given the recent change in designation for NIFTP, our case suggests a need for hypervigilance in post-thyroidectomy monitoring for encapsulated FVPTC with any demonstrated capsular invasion.

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REFERENCES

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