Struma testis is a rare entity, and malignant transformation of a testicular teratoma to papillary thyroid carcinoma (PTC) has only once been previously described. Furthermore, solid tumor metastases to the testis are rare, with a less than 1% rate of testicular metastases from solid tumors, and there are no reports of primary thyroid carcinomas metastasizing to the testis. We report the case of a 56 year old man who was found to have a cryptorchid testis containing a mature teratoma with malignant somatic component in the form of a 1.6 centimeter PTC. The patient had metastatic PTC in the lungs which was thought to be from the testicular PTC. However, due to the possibility of an unknown thyroid primary metastasizing to the lung and in order to facilitate radioactive iodine therapy, a total thyroidectomy was performed, which revealed a 0.5 millimeter papillary microcarcinoma. This case raises the question as to which papillary carcinoma (testicular or thyroidal) led to the lung metastases, and whether the testicular tumor could be a metastasis from the thyroid. Because papillary thyroid microcarcinoma is thought to be benign and has never been reported to metastasize to the testis, it is most probable that the testicular PTC originated from the teratoma and metastasized to the lungs, while the microcarcinoma in the thyroid is most likely incidental. This case highlights that, although malignant transformation to PTC has been described in struma ovarii, it may also occur in struma testis and has the potential to metastasize to the lungs.