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Pathology Second Opinion (Extended consultation)

Patient: xxxxxxxxxxxx

DOB: 09/12/1943

DATE: 03/14/2022

Discussion:

I have reviewed the written radiology reports (images not included) as well as the pathology reports. Unfortunately, the quality of the histology images is not very good and I have to mostly rely on the microscopic description provided by the clinicians. That being said, the tumor in question does, indeed, look like an adenocarcinoma and the CA19.9 staining appears to be very strong.

As was previously pointed out, it is much more likely for a primary pancreatic neoplasms to metastasize to the lung, than a primary lung tumor to metastasize to the pancreas. The pancreas is not often the site of metastasis; however, there are several reports of this occurring in the literature.

We are left with the situation of a pancreatic mass and an associated pulmonary mass proven to be adenocarcinoma. The question is what is the tissue of origin of the pulmonary lesion? This is not an uncommon occurrence in pathology. Often the best initial approach in resolving this issue is to compare the microscopic (H&E) appearance of the 2 tumors and see if they are similar in appearance. Because pancreatic biopsy is not often performed, this approach will not be very helpful.

The second best approach would be to perform additional studies in the form of immunohistochemistry on the pulmonary lesion to see if the particular staining pattern is more in keeping with a pulmonary or pancreatic tumor. In this particular case, two (2) stains were performed (TTF-1 and CA19.9).

TTF-1 staining is not entirely specific but is classically associated with pulmonary adenocarcinomas. Typical pattern of staining is strong and diffuse nuclear positivity. In the current case, staining was focal and patchy.

CA19.9 is a serum marker that is released in large quantities by malignant cells strongly associated with tumors of the gastro-intestinal track and pancreatico-bililary tract. Typically, one would expect tumors of pancreatic origin to stain strongly with this marker as it does in the current case.

Given this information, my assessment on the case is based on the following observations:

1. It is much more likely for a pancreatic tumor to metastasize to the lung than vise versa.
2. CA19.9 is a strong immunohistochemical marker for tumors of pancreatic origin.
3. TTF-1, although classically associated with lung adenocarcinomas, stains patchy and focal in the current case and can rarely be seen in association with pancreatic adenocarcinomas.

Given this information, I would certainly favor that the lung tumor represents a metastatic deposit from a pancreatic primary tumor.

Recommendations:

There are a couple recommendations and problems that I have with the current case, however.

1. The pancreatic mass is close to 3-cm in size and near the uncinate process. Although this is almost certainly a carcinoma, I see nothing in the report which has proven this to be a malignancy. Typically a fine needle aspiration (FNA) can be performed to demonstrate the malignant cells. Although highly unlikely, if this is proven not to be carcinoma (or a different type of carcinoma – for example a neuroendocrine malignancy) the approach to the lung lesion would be significantly different.

2. I feel that not enough immunohistochemical stains have been performed on the lung lesion. At a minimum, I would perform the following stains: cytokeratin 7, cytokeratin 20, and Napsin-A, in addition to TTF-1 and CA19.9. This panel would be helpful because lung carcinomas are typically positive for:
- Cytokeratin 7, TTF-1, and Napsin-A
Whereas, tumors of the pancreas show variable expression of cytokeratin 7, cytokeratin 20; however, are typically negative for TTF-1 and Napsin-A.

3. Lastly, if clinically indicated and if enough tissue is available, molecular studies can be performed on the tissue block. So-called 'tissue of origin studies' can analyze the tissue to determine the most likely site of origin.

John Perry, M.D.

-Electronically Signed by: , MD, Board Certified Pathologist on 03/15/2014 2:35:56 PM