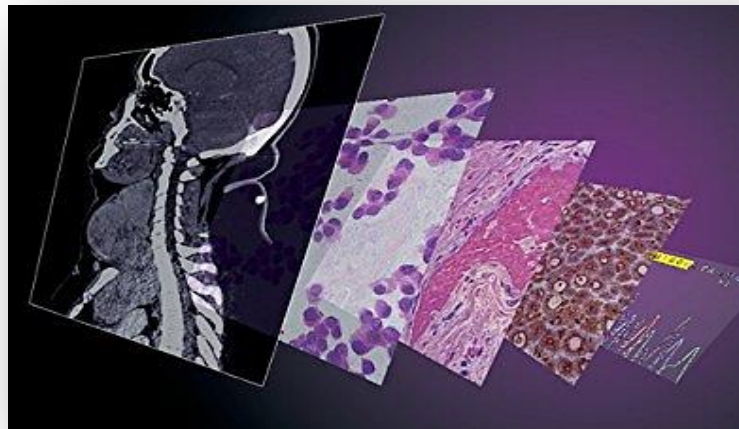


Why Pathology is Important in NET Patient Management



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What Is Pathology?

- **Pathology**, from the greek πάθος, *pathos*, “feeling, suffering” and λογία, *logia* “study of”
- The study and diagnosis of disease through examination of organs, tissues, bodily fluids, and whole bodies

The Pathology Diagnosis

- The pathological diagnosis is the gold standard that indicates the presence or absence of disease, the type of disease, and its classification
- Therapeutic decisions are based on the pathology diagnosis
 - a misdiagnosis can result in unnecessary, harmful and aggressive therapy or inadequate treatment

Diagnosis

Prognosis

Prediction

The Scope of Pathology

- Biochemistry
 - Measurements of Chromogranin, hormones
- Hematology
 - Ensure no impact of Rx on blood cells
- Microbiology
 - Ensure no infections during RX
- Anatomical Pathology
 - The tissue diagnosis!
- Molecular Pathology
 - Genetic alterations that can cause disease, diagnose familial predisposition and determine targets for Rx

Case Example 1

- Middle aged woman with small bowel NET
- Surveillance 5HIAA levels normal
- Ultimately imaging identified liver lesions
- Bx: metastatic NET
- Pathology review identifies paraganglioma not EC cell (serotonin-producing) tumor
- Tumor is SDHB deficient
- ❖ Should not have been measuring 5HIAA but rather catecholamines
- ❖ Patient screened for germline familial disease and family screening initiated

Case Example 2

- Young man with lateral neck mass - NET
- DDX includes thyroid, thymus, lung, pancreas and GI primaries
- Pathology review identifies somatostatin production consistent with pancreas primary
- ❖ Pathology identifies primary site, biomarker and provides explanation for symptoms
- ❖ Pathology identifies high Ki67 (MIB1) to direct chemotherapy

Case Example 3

- Middle aged woman with thyroid lump
- Biopsy inconclusive
- Surgery
- Diagnosis: benign thyroid mass but associated C cell hyperplasia and multifocal micro-medullary thyroid carcinoma
- Germline screening for RET mutation for patient and family

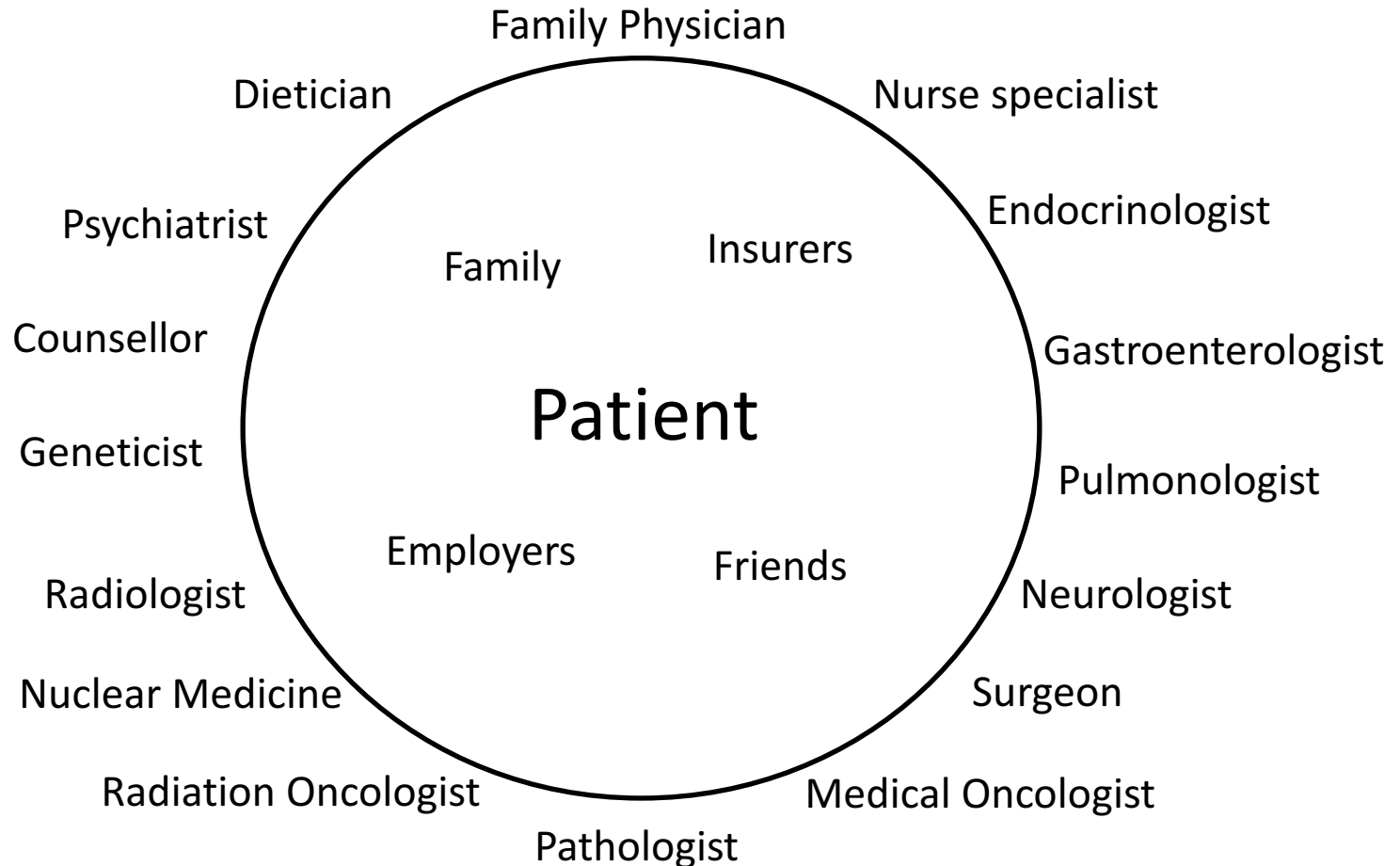
Case Example 4

- Middle aged man with abdominal mass
- Bx identifies NET
- Immunostaining shows TTF-1 positivity
- Clinical history confirms previous “benign” lung tumor
- ❖ Correct diagnosis: metastatic lung NET

Case Example 5

- Young woman with rectal bleeding
- Biopsy identifies “NET”
- Immunoprofiling shows L cell phenotype
- ❖ Patient reassured of low grade tumor
- ❖ Correct biomarkers known for surveillance

The Pathologist is an Integral Member of the Medical Team



Sir William Osler

As is our pathology,
so is our practice;
what the pathologist
thinks today, the
physician does
tomorrow

Osler W. An Address on the Treatment of
Disease, June 3, 1909. British Medical
Journal, July 24, 1909, p185-9.

