Role of PET/CT in differentiation between benign and malignant parotid gland tumors

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1. Introduction

Salivary gland tumors comprise:
- 3% of all head and neck cancers and less than 5% of all malignancies
- Positron emission tomography (PET) with 2-fluorine-18 fluoro-2-deoxy-D-glucose (FDG) allows detection of tumor cells due to their hypermetabolic activities.
- FDG PET has been reported to be more accurate in detecting head and neck malignancies than CT or MRI.
- PET/CT imaging - metabolic and anatomical characteristics of the tumor.
- A standardized uptake value (SUV) can be measured to quantify the tumor FDG uptake.

1.1. List of 2319 patients

1.2. Inclusion/Exclusion Criteria:
- Patients ≥18 years of age.
- No prior history of head or neck malignancies.
- Patients with baseline PET/CT at BMC.
- Patients who show increased diffuse uptake in the parotid gland.

2. Methods

2.1. Data Collection:
- Patient demographics: age, sex, ethnicity
- Risk factors: smoking
- Collect pathological data and outcome data for all patients
- Collect SUV measurements of:
  - SUV max of the affected parotid gland
  - SUV mean normalized to liver SUV mean (SUV Parotid gland or tumor SUV max / liver SUV mean).

2.2. Analysis

2.2.1. SUV measurement

2.2.2. Statistical Analysis

3. Results

3.1. Data Analysis

Figure 1: Figure shows the median parotid gland SUV max between:
- A) Control group and study group
- B) Increased diffuse uptake and tumor uptake
- C) Benign tumor and malignant tumor groups

3.2. Patient Demographics

3.3. Conclusion

4. Discussion

5. References