**Surgical Outcome of Growth Hormone-Secreting Pituitary Adenomas
in Al-Basra Skull Base Center**

Hassen Hadi Almohammed

Consultant Neurosurgeon, Al-Sadr Teaching Hospital

**Abstract**

**Background**

Acromegaly, the most common clinical manifestation of a functional pituitary adenoma (PA) that secretes growth hormone (GH), is characterized by excessive GH and insulin-like growth factor 1 (IGF-1) production. Patients with GH-secreting PAs often present with systemic symptoms such as headaches, hypertension, hyperglycaemia, and visual disturbances. The endoscopic endonasal transsphenoidal approach (EETA) has become the preferred first-line surgical treatment for these tumours due to its effectiveness and low complication rate.

**Objectives**

This study aims to evaluate the surgical outcomes of EETA in patients with GH-secreting pituitary adenomas at the Al-Basrah Skull Base Center. The study focuses on clinical characteristics, radiological features, extent of surgical resection, remission rates, and factors influencing postoperative outcomes.

**Methods**

A longitudinal descriptive observational study was conducted on 16 patients diagnosed with acromegaly and treated using EETA between 2018 and 2025. Preoperative clinical, biochemical, and radiological assessments, including serum GH and IGF-1 levels and MRI, were performed to evaluate tumour characteristics (Diameter, invasion and classification). Postoperatively, patients were followed up for one year with regular serum hormone testing and MRI evaluations to assess residual tumour and remission status.

**Results**

The study included 16 patients (9 males and 7 females) with a mean age of 40.88 ± 10.83 years. The total tumor resection rate was 31.25% (3 patients), and the subtotal resection rate was 50% (8 patients). The overall remission rate was 43.75% (7 patients). Factors such as sex, tumor size, preoperative GH levels, and tumor invasiveness were not significantly correlated with the extent of resection or remission rates (p>0.05) however patients with macroadenoma, non-invasive tumour, lower GH level having higher rate of getting gross total resection and higher remission rate. Most patients showed clinical improvement in acromegalic symptoms postoperatively. Postoperative GH levels significantly decreased within 14 days after surgery (P < 0.05), and 43.8% (7 patients) achieved normal IGF-1 levels after surgery.

**Conclusion**

The study concludes that EETA is an effective treatment for GH-secreting pituitary adenomas, achieving satisfactory remission rates and symptomatic improvement. Despite the insignificant correlation of tumor size, invasiveness, and preoperative GH levels with remission, patients with larger tumors or lower preoperative GH levels showed a trend toward lower remission rates. Further studies with larger cohorts are recommended to identify significant predictors of surgical and endocrine outcomes.