



From Detection to Intervention: One Institution's Experience in Diagnostic Workflow of Skull Base Lesions



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Introduction

Anterior skull base lesions are rare and can present in many different clinical settings with a variety of different symptoms, including headaches, vision changes, weight gain, or amenorrhea. Skull base lesions are also often identified incidentally on imaging in other settings.

Once skull base lesions are diagnosed, expeditious treatment is critical to minimize risk of potentially irreversible sequelae. As such, management of these lesions involve an organized diagnostic workflow in the setting of a multidisciplinary treatment approach. To date, there is scant literature on systematically quantified access to care metrics, such as time from initial presentation to diagnosis and treatment. This study aims to characterize referral patterns and diagnostics to treatment timelines of patients with new diagnoses of skull base lesions.

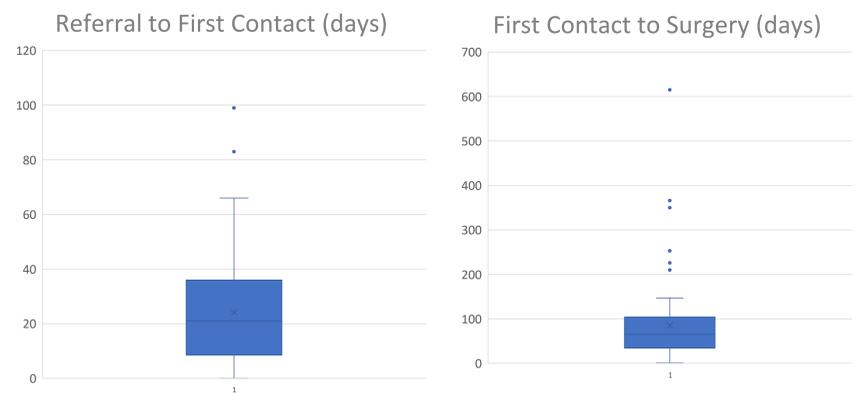
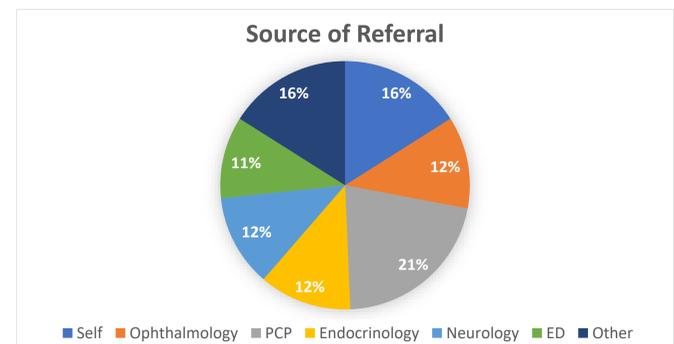
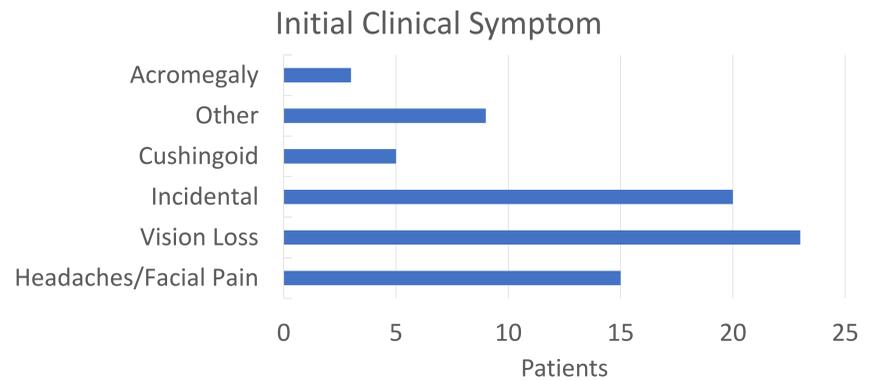
Materials and Methods

A retrospective review was performed on adult patients that underwent endoscopic anterior skull base surgery at a single institution in 2024. Exclusion criteria included patients who were already established for more than 2 years with a skull base subspecialist provider in endocrinology, neurosurgery, or otolaryngology, patients that chose to defer surgery after initial referral to the skull base team despite recommendation for surgery, and patients with neoplasms involving the anterior skull base but not originating from the skull base, including those with orbital or nasal cavity tumors. Information was obtained about patient demographics as well as clinical presentation.

Results

Seventy-five patients were reviewed. The three most common presenting symptoms were vision loss (23, 30.7%), incidental (20, 26.7%), and headaches (14, 18.7%). The two most common diagnoses were pituitary adenoma (52, 69.3%) and meningioma (12, 16%). 44 (58.7%) were first referred to skull base neurosurgery, 19 (25.3%) were first referred to skull base endocrinology, and 11 (14.7%) were referred concurrently to neurosurgery and endocrinology. 41 (54.7%) were diagnosed at an outside facility, while 34 (45.3%) were diagnosed at our institution. Of the cases diagnosed in our institution, the most common referral base was patients' primary care providers (16, 21.3%), followed by self (12, 16%), ophthalmology (9, 12%), endocrinology (9, 12%), and neurology (9, 12%). Median time was 2 days between initial diagnosis and referral, 21 days between referral and first contact with skull base team, 29 days between surgical request and surgical date, and 65 days from first contact to surgical date.

Results



Discussion

The ability of a healthcare system to diagnose skull base lesions in the general population and refer them efficiently to the appropriate providers for timely management is critical to patient outcomes. Our data demonstrates that patients with newly diagnosed skull base lesions have diverse initial presenting symptoms with multiple referring patterns. There is a range of times between diagnostic imaging, decision for surgery, preoperative planning, and surgery. Assessing these metrics is critical to explore the many factors that contribute to treatment timing after multidisciplinary assessment of patients.

Conclusions

Evaluating metrics in the patient referral pathway can help identify system-level bottlenecks and target quality improvement interventions to accelerate care delivery and optimize outcomes in patients with newly diagnosed skull base lesions.

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