TABLES

Table 1 Evidence Table

Author (Year)	Study Description	Classification Process/ Evidence Class	Conclusions
Fujimoto N, Saeki N, Miyauchi O, Adachi-Usami E (2002)[20]	Series of 15 patients with asymptomatic pituitary tumors (86% = 13/15 were NFPA) detected by MRI and 12 patients with visional symptoms from pituitary tumors (8/12 = NFPA). Vertical step, temporal depression, Goldmann perimetry, and automated perimetry used to evaluate patients.	Clinical Assessment / III	All patients with symptomatic NFPA had vertical step and temporal depression in the upper field. Of 11 patients with non-functioning adenomas and no visual symptoms, Goldman perimetry revealed 3 patients to have early temporal deficits, of whom 1 had Grade 2 compression on MRI and 2 had Grade 3 compression on MRI. Vertical step: 96% sensitivity; 100% specificity Temporal depression: 100% sensitivity; 98% specificity MRI demonstrated Grade 3 or Grade 4 compression in all symptomatic patients.

Author (Year)	Study Description	Classification Process/ Evidence Class	Conclusions
Jahangiri A, Lamborn KR, Blevins L, Kunwar S, Aghi MK (2012)[21]	Retrospective prognostic study of 75 NFPA patients with symptoms of decreased visual acuity or diminished visual fields treated with endonasal microsurgical transsphenoidal resection. Post-op visual exams were conducted between 1.5 months and 6 months after surgery.	Prognostic / III	Postoperative Visual Improvement: Duration of symptoms and age of diagnosis were not statistically significant predictors of postoperative visual improvement. Postoperative Normalization of Vision: Duration of symptoms and age (categorical/non-continuous; 20-39 years vs 40-59 years vs 60-89 years) were statistically significant indicators of postoperative normalization of vision. Patients with normalization of vision following surgical resection had a significantly shorter duration of symptoms vs patients who did not return to baseline vision (3.5 months vs 12 months; *P* = .048)

Schmalisch K, Milian M, Schimitzek T, Lagreze WA, Honneger J (2012)[23]	A retrospective prognostic/diagnostic cohort study of 98 consecutively treated patients with MRI-confirmed NFPA were evaluated. Statistical analysis to determine potential correlational associations between the position of the tumor and the scoring system for determining chiasma syndrome was conducted. Additional analysis included receiver operating characteristic (ROC) curves to determine the sensitivities and specificities of the values of coronal and sagittal extension to detect chiasma syndrome. Computerized perimetry or Goldmann kinetic perimetry were used: "Visual field examination was performed with either. All patients studied with coronal and sagittal MRI." We classified the site of the optic chiasm in relation to the suprasellar adenoma and introduced 3 grades: anterior, superior, and posterior. "Classified visual field defects into 'unilateral concentric restriction, retinal nerve fiber layer, visual field defect, unilateral involvement of the temporal hemifield, anterior junctional syndrome, complete or incomplete bitemporal visual field defect, binasal visual field defect, posterior junctional scotoma (homonymous hemianopsia), homonymous visual field defect, and normal visual fields.'" Limited data.	Clinical Assessment / III	Seventy percent (69/98) of patients with NFPA had visual field defects; 81.2% (56/69) of patients with visual disturbances were bilateral; 10.1% (7/69) were unilateral temporal hemifield defects; 27.5% (19/69) of patients with visual field defects had bilateral optic atrophy, and 13.1% (9/69) had unilateral optic atrophy. Chiasm position (ie, anterior, superior, or posterior) was not a statistically significant indicator of visual disturbances. Suprasellar adenoma extension is a statistically significant indicator of a decline in visual acuity. The authors reported 82% of patients with pre-op chiasma syndrome without optic atrophy had vision improvements, compared to 67% of patients with preoperative atrophy in at least 1 eye, and only 57% of patients with bilateral optic atrophy showed improvement in visual fields. **Sensitivities and Specificities in Detecting Chiasma Syndrome:** Coronal View: 13 mm—84% sensitivity and 76% specificity **12 mm—87% sensitivity and 72% specificity** 11 mm—90% sensitivity and 66% specificity

			Sagittal View: 9 mm—84% sensitivity and 76% specificity **8 mm—87% sensitivity and 76% specificity** 7 mm—93% sensitivity and 62% specificity 12 mm coronal view and 8 mm sagittal view are the suggested cut-off values in detecting chiasma syndrome.

Holder GE, Bullock PR (1989)[24]	Retrospective case series of 34 patients with histological confirmed NFPAs and pre-treatment visual evoked potential (VEP) examination. Mean age of patients was 55.8 years (range 25-74 years). All patients had Topcon perimetry and some had Friedman perimetry. Color vision testing with Ishihara plates.	Clinical Assessment / III	Eighty-five percent of patients (29/34) presented with either visual failure or disturbance. Headache was a feature of 10/34 patients. Visual field defects were discovered incidentally. Twenty-four percent of patients (8/34) had been misdiagnosed prior to neurosurgical referral. Mean duration of visual symptoms prior to diagnosis was 16 months (range 1 week to 4 years). At the time of neurosurgical referral, 18% of patients (6/34) had 1 eye below 6/60 visual acuity (patient could only see at 6 meters what a "normal" sighted person should see at 60 meters), and one patient's vision had worsened to "no perception of light." Some patients suffered rapid deterioration in vision (without apoplexy) while under observation for several years. Severe defects in color vision were associated with loss of central visual field. Twenty-six percent of patients (9/34) "had an unequivocally normal fundal appearance in both eyes despite a mean duration of visual symptoms of 13 months."
Robenshtok E, Benbassat CA,	Retrospective observational cohort study of 105 NFPA patients treated with transsphenoidal surgery,	Therapeutic / III	No significant pre-treatment differences in visual symptoms/deficiencies and no significant post-treatment differences in regards to visual field

Author (Year)	Study Description	Classification Process/ Evidence Class	Conclusions
Hirsch D, et al (2014)[26]	transcranial surgery, radiation therapy, or observation. Outcomes were analyzed and reported according to 3 stratified age groups: 18-44 years; 45-64 years; ≥64 years.		nominalization, improvements, and/or deterioration in visual symptoms/defects.
Jacob M, Raverot G, Jouanneau E, et al (2009)[27]	Prospective cohort single-center study of 19 consecutive adenoma patients (17 NFPA) with compression of visual apparatus. Automated visual fields and OCT were performed before treatment and 2 weeks and 3 months after treatment.	Prognostic / III	Among the eyes with a visual field defect before treatment, the odds of complete recovery after 3 months from the initial VF defect were multiplied by 1.29 for each increase by 1 micron of mean RFNL derived from OCT (*P* = .037).