

Table 3: Evidence Detailing Conventional Radiotherapy and Fractionated Stereotactic Radiotherapy for Residual/Recurrent NFPA

Author, year	Study Design / Class / Classification Process	Intervention	Follow-Up (months)	Tumor control rate	Actuarial PFS (%)	Favorable factor	Unfavorable factor	Hypopituitarism	Other complications
Kopp ⁵⁹ , 2013	Retrospective / III / Therapeutic	FSRT for 16	63	100%	-	Initial GTV	-	-	-
Iwata ³⁷ , 2011	Retrospective / III / Therapeutic	Hypofractionated SRT for 94	33	-	98%	-	-	4.1%	New onset optic nerve dysfunction: 1%
Chang ⁶⁰ , 2008	Retrospective / III / Therapeutic	RT for 663	101	90.3%	93%, 87%, 81% at 5, 10, and 15 yrs	-	Cavernous sinus invasion, subtotal resection without RT	-	-
Losa ⁵⁵ , 2008	Case control study / II / Therapeutic	G1: absent tumor: 279 G2: residual tumor without RT: 76 G3: residual tumor with RT: 81	53	-	At 5 yrs G1: 87.1% G2: 39.2% G3: 100%	-	-	-	-

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van den Bergh ⁵⁶ , 2007	Case control study / II / Therapeutic	G1: Surgery+ immediate post-op RT: 76 G2: Surgery only: 28	G1: 93 G2: 71	G1: 96% G2: 43%	At 5 and 10 yrs G1: 95%, 95% G2: 49%, 22%	-	-	-	-
Langsenlehner ⁶¹ , 2007	Retrospective / III / Therapeutic	RT for 61	180	95%	98.7%, 93.0%, 93.0% at 5, 10, 15 yrs	-	-	88%	Vascular complications: 4.5%
Minniti ⁶³ , 2006	Retrospective / III / Therapeutic	SRT (LINAC) for 67	32	-	99%, 98%, 98% at 1, 3, 5, yrs	-	-	22%	New onset optic nerve dysfunction: 1%
Selch ⁶² , 2006	Retrospective / III / Therapeutic	SRT for 33	32	100%	100% 100% at 2, 4 yrs	-	-	15%	No patient developed cranial nerve injury or second malignancy following treatment.
Paek ⁶⁴ , 2005	Retrospective / III / Therapeutic	SRT for 65	30	98.5%	98% at 5 yrs	-	-	6%	New onset optic nerve dysfunction: 3%
Park ⁵⁷ , 2004	Case control study / II / Therapeutic	G1: Immediate XRT for 44 G2: obs + XRT for 132	G1: 68 G2: 45	-	At 5, 10 yrs G1: 98%, 98% G2: 85%, 49%	-	-	-	-

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Jalali ⁶⁶ , 2000	Retrospective / III / Therapeutic	SRT for 13	9	100%	100% at 1 and 2 yrs	-	-	0%	Permanent Visual impairment: 0%
Kokubo ⁶⁵ , 2000	Retrospective / III / Therapeutic	XRT for 22	126	100%	-	-	-	35% (panhypopituitarism)	New cranial nerve deficits: 0% New onset optic nerve dysfunction: 5%
Woolloons ⁵⁸ , 2000	Case control study / II / Therapeutic	G1: XRT for 50 G2: non-XRT for 22	64	G1: 74% G2: 54%	-	Complete tumor excision	-	-	-
Breen ⁶⁸ , 1998	Retrospective / III / Therapeutic	XRT for 120	108	87.5%	87.5%, 77.6%, 64.7% at 10, 20, and 30 yrs	Nononcocytic null cell adenoma	Oncocytoma	-	Optic and oculomotor neuropathy: 0.8% Radiation-induced neoplasms (meningioma and glioblastoma multiforme): 1.7%
Gittoes ⁶⁷ , 1998	Retrospective / III / Therapeutic	XRT for 126	90	-	93%, 93% at 10 and 15 yrs	-	-	-	-
Coke ⁶⁹ , 1997	Retrospective / III / Therapeutic	SRT for 14	10	100%	-	-	-	-	-
Zierhut ⁷⁰ , 1995	Retrospective / III / Therapeutic	XRT for 138	78	95%	-	-	-	27%	New onset optic nerve dysfunction: 1.5%

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Tsang ⁷¹ , 1994	Retrospective / III / Therapeutic	XRT for 160	104	-	87% at 10 yrs	-	-	23%	New onset optic nerve dysfunction: 0%
Brada ⁷² , 1993	Retrospective / III / Therapeutic	XRT for 411	130	-	94%, 88% at 10 and 20 yrs	-	-	30% at 10 yrs	New onset optic nerve dysfunction: 1.5%
McCullough ⁷³ , 1991	Retrospective / III / Therapeutic	XRT for 105	140	-	95% at 10 yrs	-	-	-	-
Grigsby ⁷⁴ , 1989	Retrospective / III / Therapeutic	XRT for 121	94	-	89.9% at 10 yrs	-	-	-	New onset optic nerve dysfunction: 1.7%

FSRT: fractionated stereotactic radiotherapy, G: group, GTV: gross tumor volume, LINAC: linear acceleration, SRT: stereotactic radiotherapy, XRT: fractionated radiotherapy, yrs: years