

수두증을 동반한 송과체 부위 종양에 대한 내시경적 치료

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= Abstract =

Endoscopic Management of Pineal Region Tumors with Associated Hydrocephalus

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Purpose : In general, pineal region tumors are managed by using microsurgical approach or stereotactic biopsy. However, in selected cases endoscopic approach to pineal lesions might prove to be as effective as microsurgery and less invasive. We report an alternative surgical strategy for managing certain patients with pineal neoplasms that allows treatment of the symptomatic hydrocephalus as well as tumor biopsy under direct vision in the same sitting.

Materials and Methods : Twenty - two patients with pineal region tumors with associated hydrocephalus were treated in one session by endoscopic third ventriculostomy and endoscopic tumor biopsy at our institution from October 1996 to January 2000. All patients were retrospectively evaluated.

Results : There was no operative mortality. There was one cause of significant bleeding during biopsy, but was controlled endoscopically, and the patient recovered completely without neurologic deficit resulting from intra - operative bleeding. The symptoms related to increased intracranial pressure(ICP) have resolved in all patients, and the need for a shunt is completely eliminated. Histological diagnosis was achieved in 21 of the 22 patients by this procedure. A biopsy was not obtained in one patient. Although this pineal region tumor was seen endoscopically, this could not be biopsied because of technical difficulties in working around an enlarged massa intermedia. The lesions included fourteen germinomas, three mixed germ cell tumors, and one each of the followings: pineocytoma, pineoblastoma, pineocytoma/pineoblastoma(intermediate type), meningioma, and low grade glioma. Five of the 22 patients subsequently underwent formal microsurgical tumor removal. Additional chemotherapy or radiotherapy could then be initiated according to the histological diagnosis.

Conclusion : We consider that endoscopy affords a minimally invasive way of reaching three objectives by one - step surgery in the management of pineal region tumors with associated hydrocephalus : 1) cerebrospinal fluid(CSF) sample for analysis of tumour markers and cytology, 2) treatment of hydrocephalus by third ventriculostomy, and 3) several biopsy specimens can be obtained identifying tumors which will require further open surgery or adjuvant radiation and/or chemotherapy. However, complications and morbidities should be emphasized so as to be avoided with further technical experience.

KEY WORDS : Endoscopic third ventriculostomy and biopsy · Pineal region tumors · Hydrocephalus · Less invasive · One - step surgery.

서 론

가

CT, MRI (). peel-away sheath sheath 3 3 3 (landmark) (infundibular recess) (optic chiasm) (premamillary space) 3 3 가 가 3 3 2)3)9 - 12)14)19)22) Fogarty balloon catheter 3 3 1)4)5)7)8)13)16)17)20) (ventriculostomy) 3 3 가 가 (aqueduct of sylvius) (pineal recess), (habenular commissure), (suprapineal recess)

대상 및 방법

1996 10 2000 1 22

CT, MRI, (Fig. 1) 19 : 3 2~43 18.9

결 과

6~44

수술방법

(parasagittal) 3cm

3 22 6~44 (Table 1). 70 40~140 가 . 1 (19)

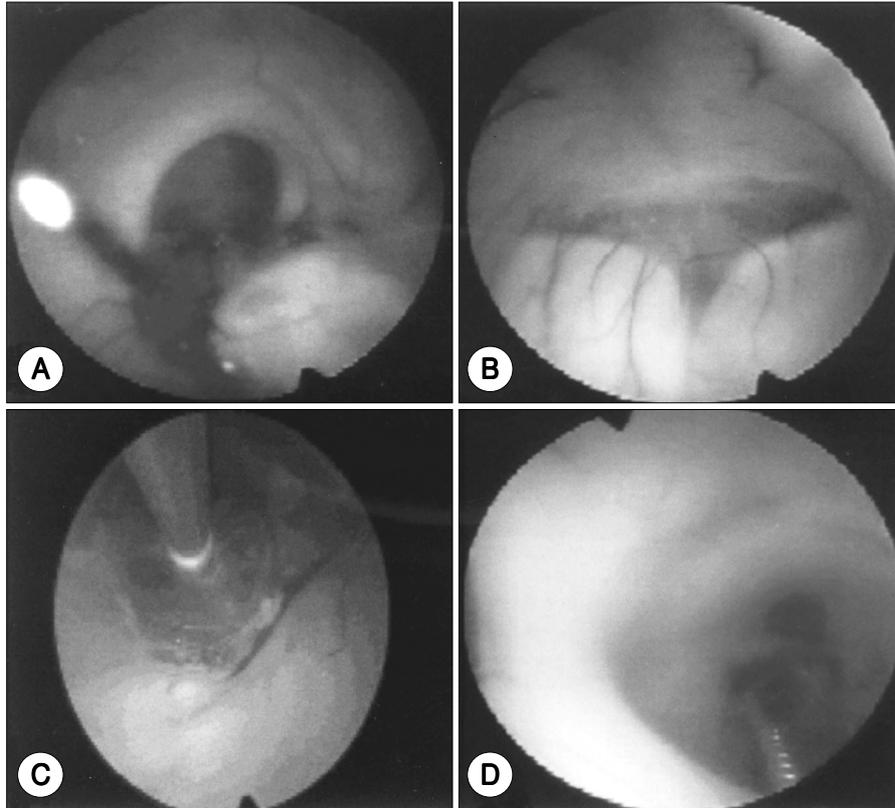


Fig. 1. Operative view of endoscopic third ventriculostomy and biopsy. A : Right foramen of Monro, the choroid plexus, and the thalamostriate vein are shown. B : Floor of the third ventricle, the infundibular recess, and the mammillary bodies are shown. The pulsatile basilar artery can be seen through the thinned tuber cinereum. The floor has not yet been perforated. The site for perforation is in the midline anterior to the basilar artery. C : A Fogarty balloon catheter introduced through the working channel of the endoscope is advanced through the small opening in the floor of the third ventricle made by the blunt probe. The balloon is repeatedly inflated and deflated to enlarge the fenestration. D : Through the working channel of the endoscope, biopsy forcep is advanced to the surface of the lesion and biopsies are obtained.

(mixed germ cell tumor), (pinealoma), (pineoblastoma), (germinoma), (meningioma), (glioma), (extraventricular drainage)

3 22 가 22 가

3 가 고 찰

22 21

. 1 3

(22).

(massa intermedia) 가 가

14 (germinoma), 3

Table 1. Summary of characteristics in 22 patients undergoing endoscopic third ventriculostomy and biopsy for pineal region tumors with associated hydrocephalus

Case No.	Age /Sex	Histology	Additional treatment	Complications /problems	F/U (mos.)	Last F/U status
1	9/M	Germinoma	RT + CTx	None	40	Stable
2	11/M	Germinoma	RT + CTx	None	10	NED
3	12/M	Germinoma	RT + CTx	None	40	NED
4	13/M	Germinoma	RT	None	42	NED
5	14/M	Germinoma	RT + CTx	None	26	NED
6	18/M	Germinoma	RT + CTx	None	43	NED
7	18/M	Germinoma	RT + CTx	None	28	NED
8	19/M	Germinoma	RT + CTx	None	34	NED
9	21/M	Germinoma	RT + CTx	None	8	NED
10	23/M	Germinoma	RT	None	41	NED
11	26/M	Germinoma	RT + CTx	None	39	NED
12	34/M	Germinoma	RT + CTx	None	16	NED
13	43/M	Germinoma	RT	None	44	NED
14	16/F	Germinoma	RT + CTx	None	9	NED
15	19/F	Low grade glioma	OTTA & PR	None	40	Stable
16	19/M	Meningioma	OTTA & GTR	None	40	Stable
17	12/M	Mixed germ cell tumor	OTTA & STR	None	40	Progression
18	17/M	Mixed germ cell tumor	RT + CTx	None	40	Stable
19	9/M	Mixed germ cell tumor	OTTA & GTR, CTx	Massive bleeding during Bx.	44	NED
20	2/F	Pineoblastoma	CTx	None	10	Progression
21	30/M	Pineoblastoma	OTTA & GTR	None	11	NED
22	31/M	Pineocytoma/pineoblastoma (intermediate type)	Stereotactic Bx, GKR	Endoscopic Bx. was aborted due to enlarged M	28	Stable

* : M, male ; F, female ; RT, radiotherapy ; CTx, chemotherapy ; OTTA, occipital transtentorial approach ; GTR, gross-total resection ; STR, subtotal resection ; PR, partial resection ; Bx., biopsy ; GKR, gamma knife radiosurgery ; M, massa intermedia ; F/U, follow-up ; mos., months ; NED, no evidence of disease

가 12), 가 가 가 가 20), 6)15)18) 가 21), 가 가 가 8)21), 3 1)4)5 - 10)12 - 14)16)17)20), MR CT, 가 4)7)14)16)17)20),

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