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Review article

Nonfunctioning pituitary adenomas in elderly patients

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ABSTRACT

Background: Recently, several reports have revealed new aspects regarding transsphenoidal surgery (TSS) for pituitary lesions in elderly patients.

Objective: The aim of present study is to provide an updated review of the recent literature, which we hope will contribute to the management of nonfunctioning pituitary adenoma (NFPAs) in elderly patients.

Methods: We searched PubMed and Web of Science for reports on TSS for NFPAs in elderly patients and reviewed the literature.

Results: NFPAs, which cause the symptoms of tumor mass effect, are the most common form of pituitary adenoma in elderly individuals. The rates of tumor resection and postoperative visual improvement in elderly patients are similar to those in younger patients; however, elderly patients have greater difficulty in recovering from preoperative hypopituitarism. TSS is associated with low rates of morbidity and mortality in elderly patients. However, there is a possibility that the risks of morbidity and mortality increase with advancing age. TSS is not considered for elderly patients who show hypopituitarism alone, but who either have or are predicted to experience a tumor mass effect. Prospective MRI follow-up without surgery can be also proposed for elderly patients with a high American Society of Anesthesiologists (ASA) grade or those in whom there is no evidence of tumor growth towards the optic pathway.

Conclusions: TSS is considered a safe procedure for the treatment of NFPAs and is even tolerated by elderly patients; however, the surgical indications, which are based on the patient's clinical condition and the results of radiological examinations, should be strict.

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1. Introduction

Many studies have reported the safe and successful application of transsphenoidal surgery (TSS) in the treatment of elderly patients, similarly to younger patients. However, most such studies only involved a small number of patients, or did not include a control group that was treated at the same institution during the same era. Moreover, while the majority of elderly patients had nonfunctioning pituitary adenoma (NFPAs), various types of tumors were treated in some of the reports. On the other hand, studies of large series of patients have shown that elderly patients have a higher incidence of inpatient mortality and a longer duration of hospitalization following pituitary surgery [1,2]. Furthermore, it was recently reported that the risks of complications associated with pituitary surgery are higher in elderly patients [3–6]. In this study, we present an updated review of the recent literature, which we

hope will contribute to the management of NFPAs in elderly patients.

2. Methods

A review of the literature was performed by searching PubMed and Web of Science for studies published between 2000 and 2018 using the following search terms: “pituitary adenoma” AND “elder” OR “elderly”. The search was limited to English language publications. An overview of the study selection process is presented in Fig. 1. There were seven studies about elderly patients with pituitary tumors that included a control group (younger patients), whereas there were 12 studies that did not include a control group (Table 1). Eight of the 19 articles limited the types of tumor to NFPAs. The definition of “elderly” ranged from ≥65 years of age to ≥80 years of age. The most common definition of “elderly” was ≥65 years of age; however, there were no specific grounds for this definition.

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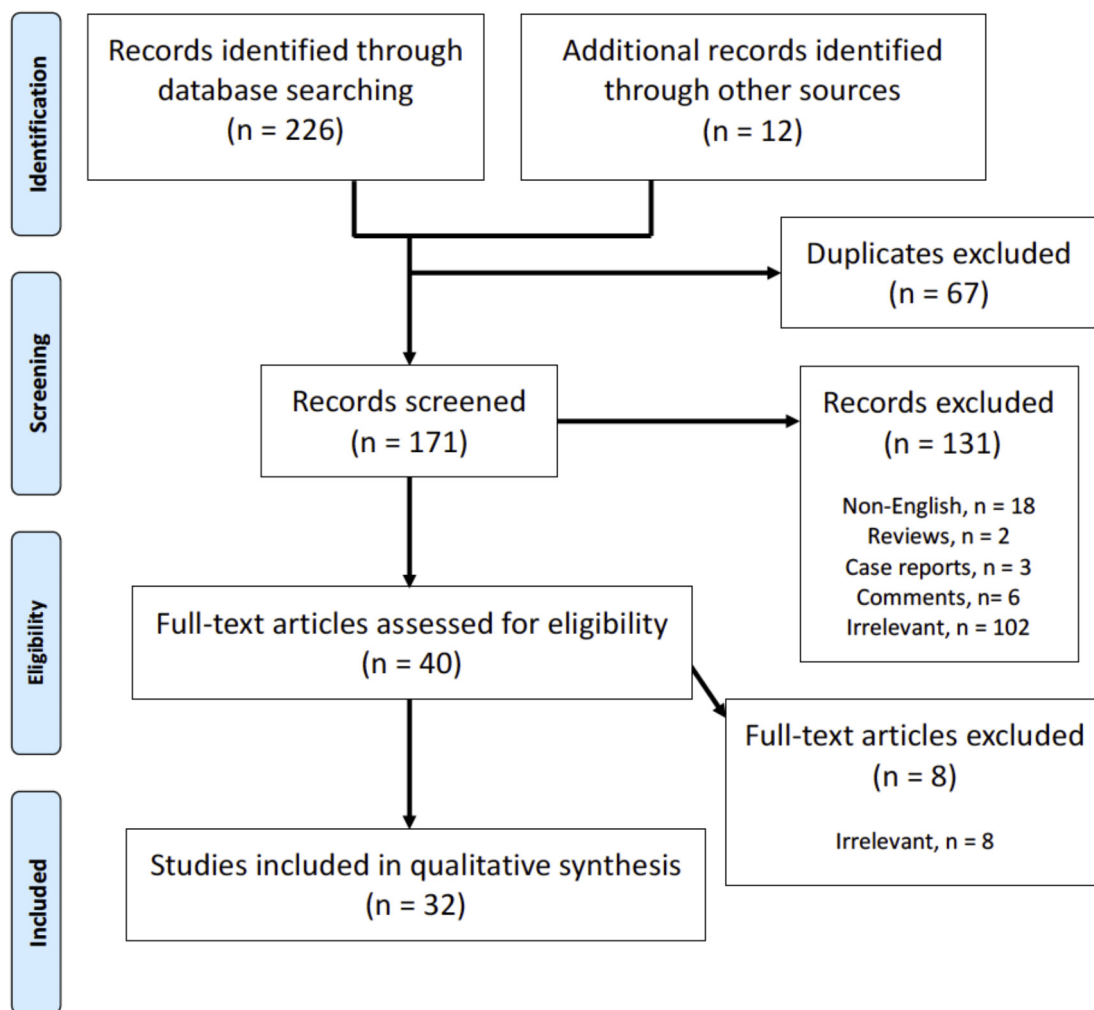


Fig. 1. The flowchart of the process used for the selection of eligible studies.

Table 1

Available literatures about elderly patients with pituitary tumors.

Authors & Year	Pt age (yrs)	No. of elder pts	Control pt age (yrs)	Pathology
Wilson et al. (2018) [3]	≥70	54	60–69	PA
Chinezu et al. (2017) [16]	≥80	15	65–75	NFPA
Fujimoto et al. (2017) [5]	≥80	12	<80	NFPA
Zhao et al. (2017) [29]	≥65	130		PA
Liu et al. (2015) [6]	≥65	69	65–75	PA
Zhan et al. (2015) [14]	≥65	158	40–55	NFPA
Marenco et al. (2015) [15]	≥65	25		NFPA
Gondim et al. (2015) [4]	≥70	55	60–69, <60	NFPA
Robenshtok et al. (2014) [17]	≥65	38	18–44, 45–64	NFPA
Pereira et al. (2014) [9]	≥70	102		Pituitary tumor
Yunoue et al. (2014) [18]	≥80	10		PA
Locatelli et al. (2014) [20]	≥65	43		PA
Hong et al. (2008) [10]	≥65	103		PA
Sheehan et al. (2008) [11]	≥70	64		PA
Del Monte et al. (2007) [30]	≥65	27		NFPA
Letourmel et al. (2003) [31]	≥65	59		Pituitary tumor
Ferrante et al. (2002) [13]	≥70	39		PA
Kurosaki et al. (2001) [32]	≥80	15		Pituitary tumor
Kurosaki et al. (2000) [19]	≥70	32		NFPA

NFPA, non-functioning pituitary adenoma; no, number; PA, pituitary adenoma; pt, patient; yrs, years.

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