



Current Trends in the Management of Acoustic Neuroma in the United States: Are We Over Treating?

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Learning Objectives

To understand the current treatment trends of acoustic neuroma in the United States.

Introduction

A growing body of evidence suggests that a significant percentage of acoustic tumors do not grow and observation is now advocated as a viable option also in young patients. It is still unknown however, how these new data on the natural history of vestibular schwannomas has impacted management decisions in North America.

Methods

Data were downloaded using the SEER*Stat software from the 2007 Surveillance, Epidemiology, and End Results Program database. This database is maintained by the National Cancer Institute and represents 26% of the United States population. Cases were isolated based on the ICD-O-3 histology code (9560/0 and 9570/0) and site code (C72.4). Data from 2004-2007 were included. Tumor incidence was calculated using the US Census Bureau's Population Estimates Program. The number of patients undergoing surgical resection was compared to the number of patients treated with beam radiation based on the tumor size (<2cm, 2-4 cm, >4cm).

Results

A total of 3650 cases were identified from the database. The overall annual incidence of acoustic neuromas remained unchanged (1.3 per 100,000 in 2004 to 1.1 per 100,000 in 2007). Over the study period, management choices of acoustic neuromas showed a significant change only for tumors <2cm ($p=0.014$) (Figures 1 and 2). The percentage of patients undergoing observation, radiation, and surgical resection was 16.7%, 22.5%, and 60.8% respectively in 2004; 21.1%, 22%, and 56.9% in 2005; 21.3%, 27.3%, and 51.4% in 2006; and 20.8%, 27.9%, and 51.3% in 2007.

Figure 1

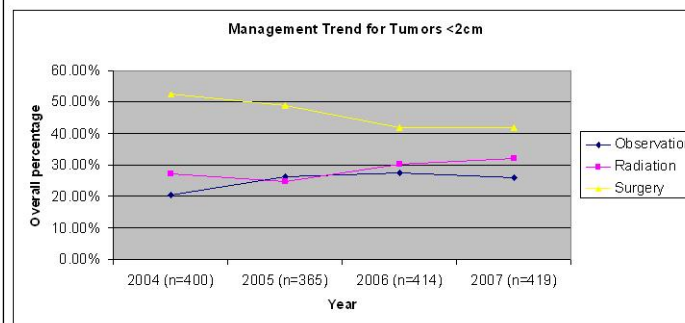
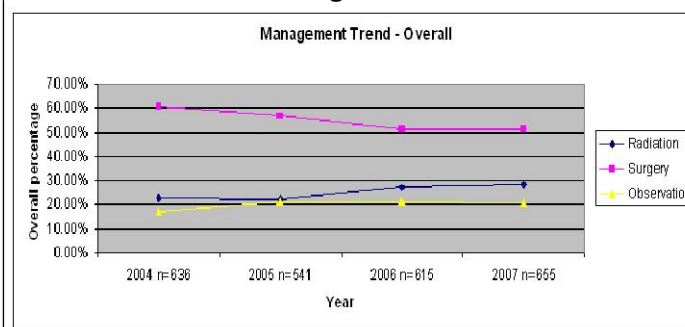


Figure 2



Conclusions

Our study demonstrates a shift in the management of small acoustic neuromas in the United States between 2004 and 2007 with microsurgical resection giving way to radiation in small tumors while overall rate for observation remained stable. With recent literature suggesting that the majority of small tumors do not grow, it will be interesting to see if the next shift will be from intervention to observation.

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