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Re: Medical and Surgical Management of Microprolactinoma

To the Editor:

A recent report by Colao et al. [1] indicates that a significant proportion of patients harboring prolactinomas treated with cabergoline will have persistence of remission of hyperprolactinemia following withdrawal of the drug. The prolactin and tumor control rates in the study suggest that medical therapy will become increasingly important for the management of all prolactinomas. Currently, surgery remains an option only for those patients in whom medical therapy has failed or in those with microadenomas. The recent results from Colao et al. [1] demonstrated an impressive 70% cure rate following cabergoline treatment of microprolactinomas; these findings are likely to further reduce the number of patients seeking surgical treatment [2]. Several factors, however, must be considered in the determination to use medical therapy for prolactinomas. In addition to control rate, factors such as the patient's medical history, personal preference and the cost of treatment should be considered. The authors have undertaken a simple comparative study of the relative cost and efficacy of medical or surgical management in those patients with microprolactinomas.

The cost of medical treatment was estimated by determining the cost of medication over the expected period of treatment. The University of Utah Hospital pharmacy sells cabergoline (Dostinex; Pharmacia & Upjohn Co., Kalamazoo MI) at $953.70 for 30 (0.5 mg) tablets, or $31.79 per tablet. The dosage used to treat hyperprolactinemia from a pituitary adenoma ranges

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from 0.5 to 2 mg/week. Assuming a mean dose of 1 mg per week, the cost per year of treatment is $31.79 x 2 x 52 = $3306.16. The median treatment period prior to withdrawal in the study by Colao [1] was 48 months with a median dose of 1 mg per week. Thus, the 4-year cost of medication alone will reach $13,224.64 and the total cost of treatment must also include several outpatient visits in addition to serial pituitary MRI studies (each at an average payment of $1025.00 in our market) and serum PRL tests to monitor progress. The total cost of treatment will therefore exceed $15,000. Adverse events associated with the use of cabergoline as reported by Pharmacia include gastrointestinal upset (nausea, constipation), CNS irregularities (headache, dizziness), asthenia, or fatigue symptoms most commonly, and occur in a total of 21% of patients. Following normalization of PRL levels and documented disappearance of the microadenoma, the medication will be discontinued, and according to the study by Colao et al. [1], 70% of patients will have no further recurrence of hyperprolactinemeia, to be monitored by serial follow-up PRL levels.

To assess the cost of surgical resection, records for the last 50 patients admitted to the University of Utah Hospital for surgical resection of pituitary adenoma were reviewed to determine hospital and surgeon payments by insurance companies (a combination of both private and federal payers, representing a spectrum of payer mix expected in most large teaching hospitals). Hospital payments included all care delivered in the operative intervention and perioperative period (including pre- and postoperative laboratory studies and anesthesia care). Surgical care is reimbursed to include 3 months of postoperative care. The total cost of surgical care including hospital and surgeon payments averages $9865.19 (Table 1).

Following surgical resection, a 91% long-term control rate, with follow-up of at least 5 years, was realized in a large series of patients with microprolactinomas [3]. Other experienced

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pituitary surgeons have obtained similar results [4-7]. Mortality is expected to be zero and morbidity minimal (primarily related to cerebrospinal fluid leak in less than 5% of patients, transient diabetes insipidus and electrolyte abnormalities in less than a total of 10% of otherwise healthy individuals) with contemporary surgical treatment of microadenomas by experienced surgeons [8]. The efficacy of surgery can be determined with great accuracy with a single fasting AM PRL level drawn on the first postoperative day (determination of long-term control is immediate) [3], and normalization of PRL levels eliminates the need to obtain follow-up imaging studies after surgery. Serum PRL levels are followed every 6 months hence. Taken together, the surgical option remains a viable and cost-effective alternative to medical therapy in this subset of patients, especially in those patients with microadenomas associated with prolactin levels less than 200 ng/ml, in whom surgical cure would be anticipated [9].

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Table 1. Cost of surgical care for patients treated with surgical resection for diagnosed pituitary adenoma.

	Range	**Mean**
Hospital Payments:	$3050.83-14.151.05	$8392.47
Surgeon Payments:	$619.09-5035.00	$1472.72
Total:		**$9865.19**

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