MODIFIED ROTATORY INSTRUMENTS FOR TRANSPHENOIDAL SURGERY

TECHNICAL NOTE

RAUL MARINO JR., M.D., F.A.C.S. *

The growing importance of transphenoidal surgery, as perfected by Hardy [1], using the operating microscope and radiofluoroscopic control of the surgical manoeuvres, has brought significant progress to the field neuroendocrinology, and in the treatment of pituitary adenomas and microadenomas, responsible for amenorrhea-galactorrhea, Cushing's disease, acromegaly, pituitary insufficiency, chordomas, meningeomas, and other space occupying lesions of the sellar and para-sellar region. Also, hypophysectomy for the treatment of endocrine-dependent cancer of the breast and prostate and diabetic retinopathy, became a much safer and biologically effective procedure after the advent of the transphenoidal microsurgical approach [1].

However, many technical problems had to be solved before such a procedure became so widely used and such a secure one. Well planned instrumentation and precise technical implementation were the keys for the progress so far obtained.

In this paper, we describe a series of modified bayonet instruments which have been designed to facilitate dissection and excision of deep pituitary lesions, and for hipophysectomy.

We have found it useful to change the fixed shaft (B, Fig. 1) of the usual transphenoidal instruments into a revolving one. This will alow the surgeon, with minimal adjustments, during the procedure, to reach all the four quadrants of the sphenoid sinus and sella, without moving his hand from the original position.

The shaft of the instruments is designed to fit its angled handle through a toothed termination (A, Fig. 1). A thumbscrew (C) adapted posteriorly to it will permit any angle of rotation desired for the scalpel, the dissectors or the various sizes curettes. This will allow the surgeon to cut, dissect or curette in any direction, using always the more technical position of his hand, that is, below the nasal speculum, keeping his fingers out of the microscope field, during the manoeuvres of delicate dissection, picture or movie taking.

* Director, Division of Functional Neurosurgery, Hospital das Clínicas, University of São Paulo Medical School, Caixa Postal 8091, 01000 São Paulo, SP, Brazil.

This series consists of a set of very handy and light instruments whose gyratory principle and optimal measurements are diagrammed in figure 1.

Figure 2 presents some of the tips used, which are the same as the conventional Hardy's dissecting instruments, with slight modifications to decrease weight.

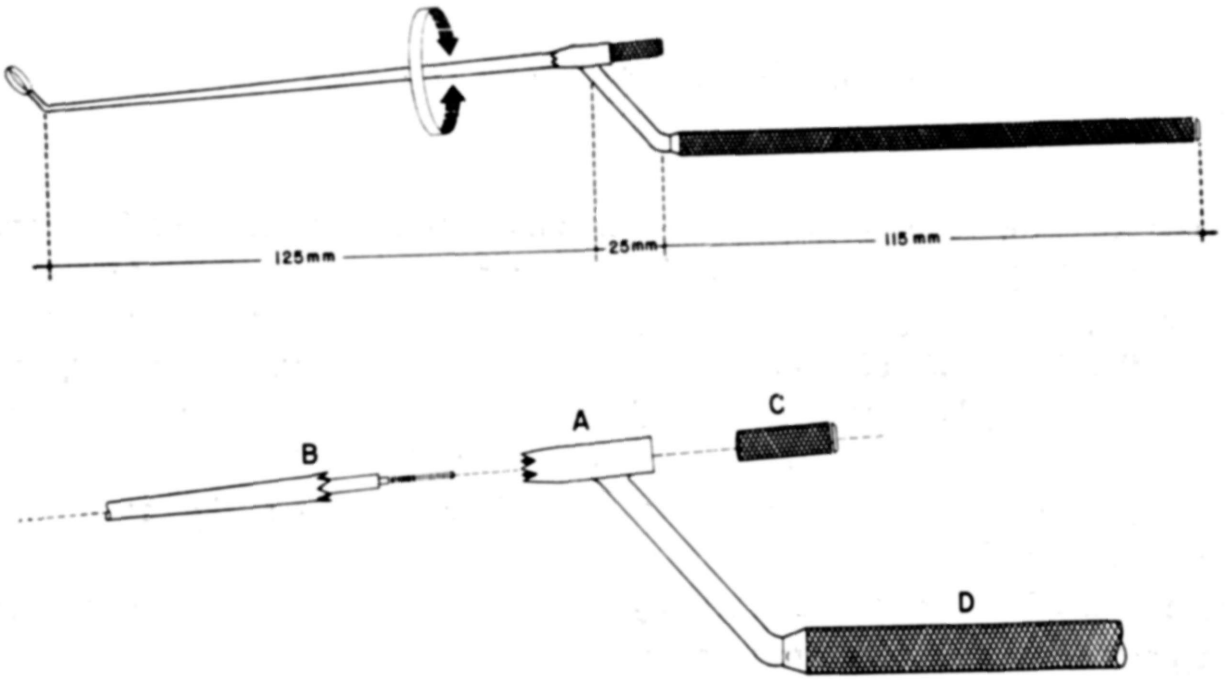

Fig. 1 — Diagrammatic aspect of rotatory bayonet instruments: A = angled angle; B = rotatory shaft; C = thumb screw.

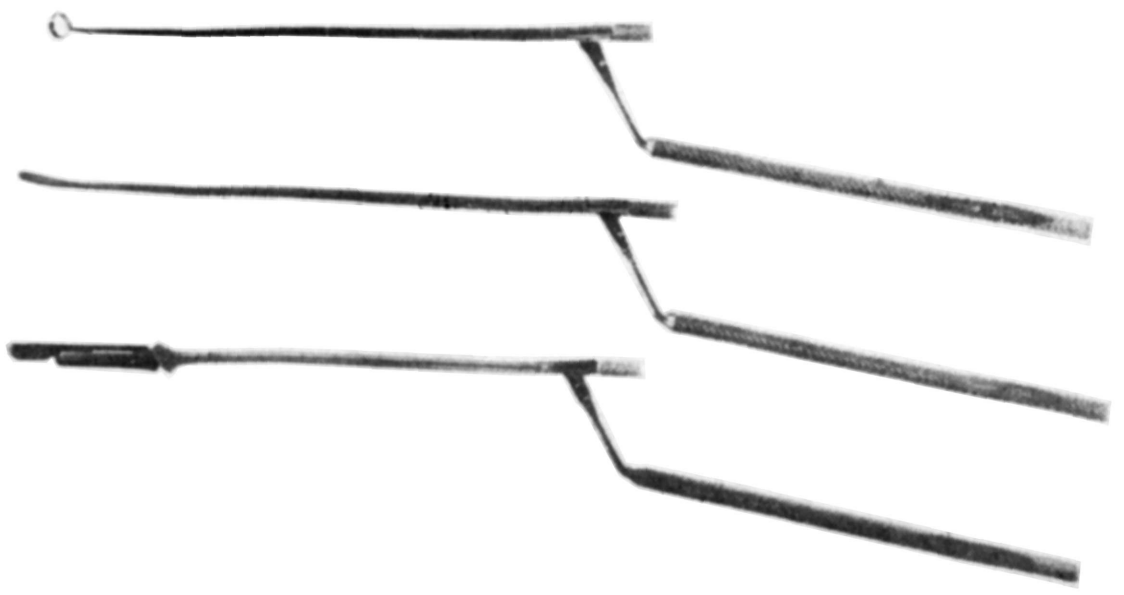

Fig. 2 — View of some rotatory instruments.

NOTE — These instruments are available from Codman & Shurtleff, Inc., Randolph, Massachusetts 02368, U.S.A.

SUMMARY

A series of modified gyratory bayonets instruments is described. They have the advantage to allow any adjustable position within a 360° rotation angle, during the various surgical steps of transphenoidal surgery, thus keeping the surgeon's hand always at the same position.

RESUMO

Instrumentação modificada para cirurgia trans-esfenoidal (instrumentos rotatórios).

O autor descreve um novo tipo de instrumentação, que utiliza em microcirurgia trans-esfenoidal. A principal vantagem desses instrumentos deve-se ao fato de o neurocirurgião poder trabalhar com os mesmos num ângulo de 360°, ajustando-o às necessidades técnicas, sem modificar a posição da mão, evitando assim, interferência com o campo ou a iluminação do microscópico cirúrgico.

REFERENCE

1. HARDY, J. & WIGSER, S. M. — Transphenoidal surgery of pituitary fossa tumors with televised radiofluoroscopic control. J. Neurosurg. 23:612-620, 1965.

Division of Functional Neurosurgery — Hospital das Clínicas — University of São Paulo Medical School — Caixa Postal 8091 — *01000 São Paulo, SP — Brasil.*