The Laryngoscope
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How I Do It

Creating the "Double Curved" Suctions for Sinus Endoscopy and Surgery

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INTRODUCTION

Rigid endoscopes, now available in varying angles (ranging from 0° to 20°), have given otolaryngologists unparalleled visualization of the paranasal sinuses. However, visualization without proper instrumentation to access difficult-to-reach areas can make sinus treatment frustrating and ineffective. Suction access to different areas within the nose and sinuses is not a straightforward process. It can be extremely challenging or even impossible to access the frontal recess or sinus with a straight suction or with the single curved suctions currently available commercially. Suctions with varying specifications are required for properly reaching these difficult to access areas. These include 1) the degree of angulation at the distal end of the suction tip and 2) the distance from the tip of the suction where the angulation takes place. Currently, there is no commercially available double-angled curved suction that allows for ergonomic access to the sinuses. Such a suction would allow for suctioning ability during endoscopic sinus surgery and office debridement. Currently, subspecialty rhinologists are required to manipulate or bend straight suctions themselves to achieve the desired specifications. This is not an easy task and involves meticulous attention to detail. Improperly bent suctions may cause them to kink lending them useless or ineffective. Additionally, suctions vary in price from $40 to $200 each, resulting in a costly mistake when damaged.

We present a safe and effective method of properly creating the second bend in straight suctions resulting in a "double bend" suction that allows for easy access to the paranasal sinuses during surgery and for office use. This procedure can be performed on any suction, but in our experience we have found the best results with the Frazer 8 (part no: 204,808; Karl Storz, Germany) straight suction.

METHODS

Step 1. A straight suction is placed on the edge of a table or ledge. A cloth is placed between the table surface and suction to prevent sliding or movement during manipulation (Fig. 1A).

Step 2. A 10-mL bottle, for example a 5 g/10 mL magnesium sulfate bottle, is placed at the approximate region where one would like the distal curvature to occur. The outer circumference of the bottle provides a gently curved surface to which the suction can mold as it bends. This prevents kinking of the suction (Fig. 1B).

Step 3. Steady and gentle upward force is then applied to the base of the suction. Concurrently, firm downward force is applied to the bottle to prevent motion or sliding of the suction (Fig. 1C).

Step 4. Once the approximate desired curvature is achieved, the process is complete (Fig. 1D).

This is an economical and easy procedure to individualize the distal curvature to the surgeons liking. As a result, we usually make two suctions with differing angles (40° and 80°) for each side. A surgical set therefore has five suctions (one straight and two for each side) for the different angles (frontal, maxillary, etc.) (Fig. 2). We have also created a separate set of "extreme curved" suctions for the very angled frontal recess. A variation of suctions ranging from very gentle curves to extreme curves can be created for the office setting. To date there are no commercially available tools to assist in creating curve suctions.

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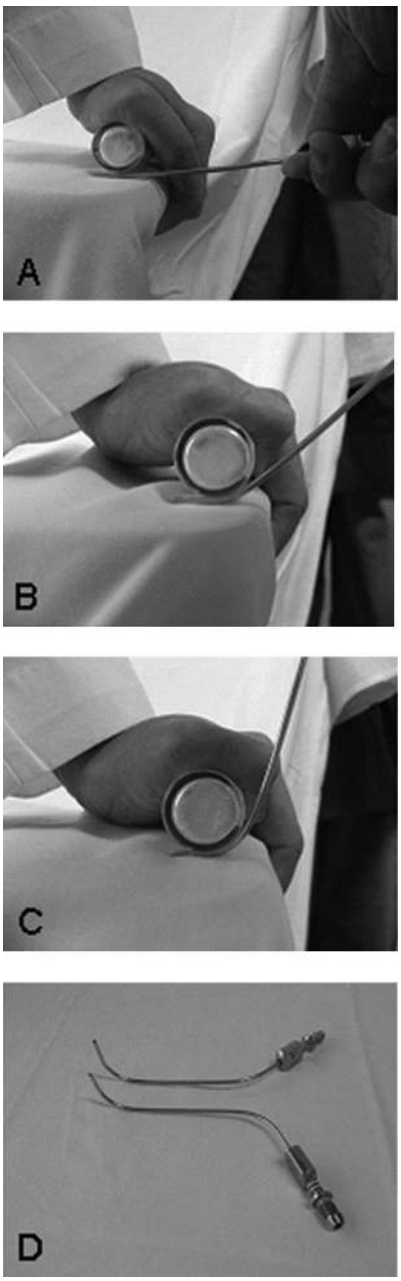

Fig. 1. (A) The tip of the suction is placed between the table edge and bottle. (B) Firm upward force on suction handle along with downward force on the suction tip causes bending of the suction. (C) Further force bends the suction to the desired angle. (D) Left and right bending double-curved suctions.

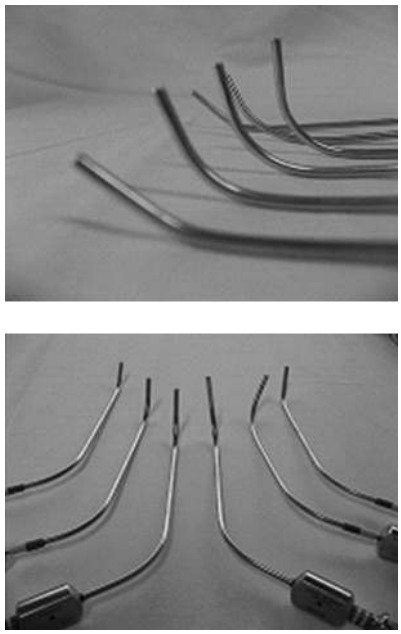

Fig. 2. Examples of the varying angulations and curvature of the double curved suction.