日本医放会誌：53（3），338-340，1993（平5）

研究速報

パルマッツ血管内ステント留置の簡便法

Simple Technique for placement of Palmaz Stent

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（平成4年12月14日受付）

Research Code No. : 508.9

Key Words : ·Artery, Stenosis, Obstruction·Stent

Introduction

Intraluminal vascular stents represent a new horizon in vascular intervention for improving the patency of stenotic or occlusive vessels after revascularization procedures. The efficacy of vascular stents for iliac stenosis or occlusion has been established in the United States and Europe [1, 2]. Clinical studies of vascular stents have just started in Japan. The purpose of this paper is to present the simplest way to place a balloon-expandable-Palmaz stent.

Materials and Methods

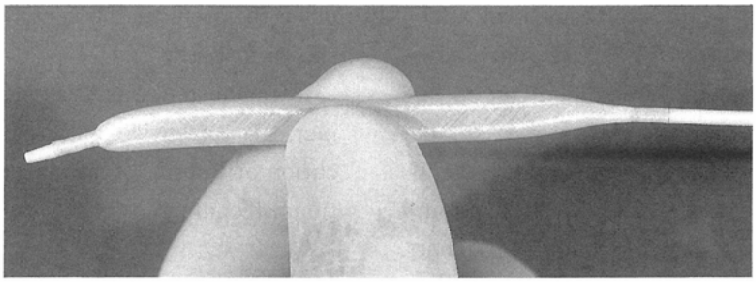
The Olbert balloon catheter (Meadox/Surgimed, Inc., Oakland, NJ) was used for placement of a Palmaz stent[3]. This coaxial design, in which a balloon slides along an inner catheter shaft during inflation and deflation, eliminates balloon surplus and the formation of balloon wings on deflation. This system consistently allows the elastic balloon to return to its original shape for the lowest profile, even after multiple inflations. The modified simple technique is shown in Fig.1. The Palmaz stent was crimped directly onto the 5.8-F Olbert balloon with finger pressure alone. The balloon's surface material prevented the stent from moving on the balloon as the stent was introduced through the sheath and lesion. The size of the balloon (4-7mm) was chosen based on how much the stent should be expanded for the individual lesion. The length of the balloon was either 3cm or 4cm. A 7-F or 8-F Terumo introducer sheath (Terumo, Somerset, NJ) was used. The balloon can be used for placement of more than one stent. A total of 26 stents were placed with this technique in 12 patients. All stents except for two superficial femoral stents were placed in iliac arterial stenoses or occlusions.

Results

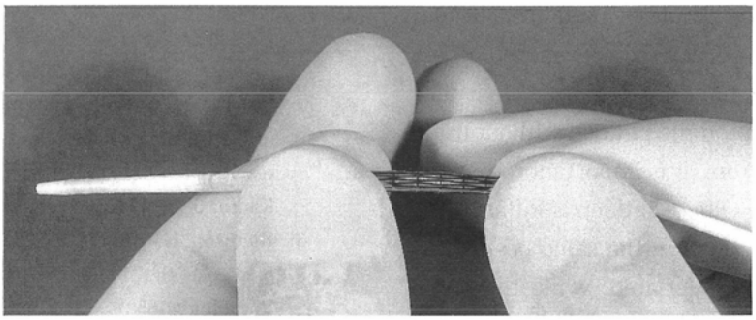
All Palmaz stents were placed at the desired position with no complications or difficulties related to this technique. All of the lesions except for one iliac occlusion were successfully revascularized with no pressure gradient after the stent placement. An average two stents (one to four stents) were delivered using the same balloon.

Discussion

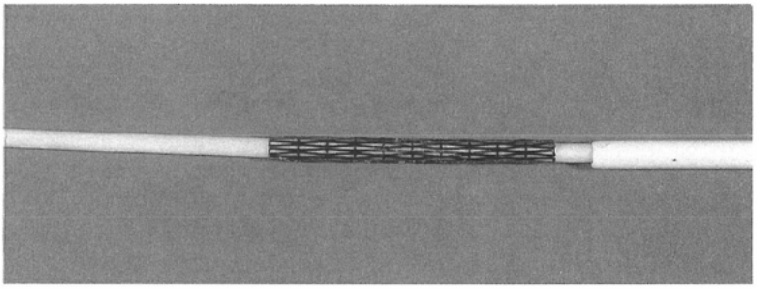
There are three big advantages in this simple technique. First, a smaller sheath (7-F rather



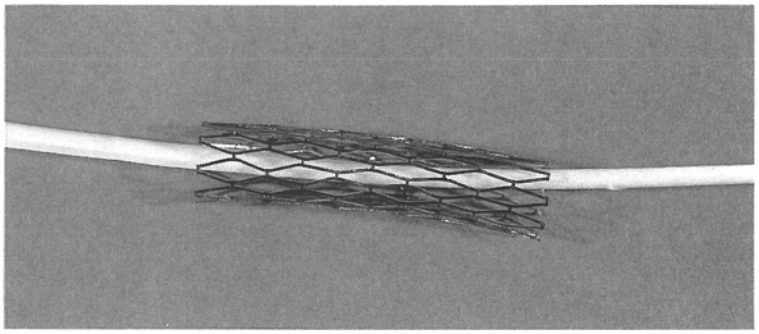
(A) The center of the Olbert balloon is confirmed before the stent is mounted.



(B) The stent is placed at the center of the balloon and crimped manually.



(C) The stent is safely advanced through the 7-F sheath without moving.



(D) After the stent expansion, the balloon is deflated completely without surplus or wings.

Fig. 1　Simple technique of Palmaz stent placement

than 10-F) can be used for placement of a 30-mm length Palmaz stent for 8-to 12-mm diameter expansion. Second, this balloon can be deflated without surplus or wings and can be removed easily without dislodging the stent. These two advantages should reduce the complications of stent delivery and placement. Third, the same balloon can be used for multiple stent placement. If a conventional balloon is used, a new balloon should be used in each stent placement. This reduces the procedure cost. In addition, only manual crimping is necessary for mounting the stent on the balloon without using a metal crimping tool. It is important to remember that when the Olbert balloon is inflated, the proximal marker stays in the same position as when the balloon is deflated, while the distal marker retracts proximally. One should identify the center of the balloon when inflated and place the stent at the center of the balloon as shown in Fig.1.

In conclusion, this technique provides a simpler, less expensive, and probably safer modification of Palmaz stent placement than conventional technique.

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