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INTRODUCTION

Acute lower-extremity ischemia (ALI) is associated with high in-hospital amputation rates and 1-year mortality rates. Although catheter-directed thrombolysis (CDT) is associated with a lower morbidity rate and is as effective as surgery for stage I and IIa ALI, it takes substantial time to be effective. The Indigo system (Penumbra, Inc) is designed for peripheral aspiration thrombo-embolectomy (PAT) available from 3 F to 8 F in size. The size-matched “separator” allows the catheter to be cleared of occlusive material without catheter removal from the area of thrombus. It has a pump-driven vacuum for consistent aspiration.

MATERIALS & METHODS

Twenty-three patients who underwent PAT for ALI from March 2017 to June 2018 were included. Primary end-point was complete thrombus aspiration with patency of the target vessel. Adjunctive treatment for underlying stenosis or occlusion was not considered indicating technical failure, while the use of additional treatment for thrombus removal was considered as a technical failure. Vessel patency was evaluated by TIMI score (Thrombolysis after Myocardial Infarction), Primary endpoint was complete thrombus aspiration with return to patency. Secondary endpoint were absence of serious adverse events, primary patency at one month, and limb salvage at one month.

RESULTS

Technical success was obtained in 20/23 patients (87%): after Indigo procedure TIMI 3 score was obtained in 65.2% of cases and TIMI 2 in 21.8%. After additional procedure TIMI score 3 was obtained in 87% of cases (Tab. 1). Of the remaining 3 patients, 2 required additional treatment for thrombus removal and in 1 case the PAT failed to restore patency and the patient underwent open surgical treatment. No complications related to PAT were reported.

CONCLUSIONS

PAT is a safe and effective procedure in the treatment of ALI, reducing the need for open surgical embolectomy and catheter-direct thrombolysis. Our results are in line with previous study in literature.

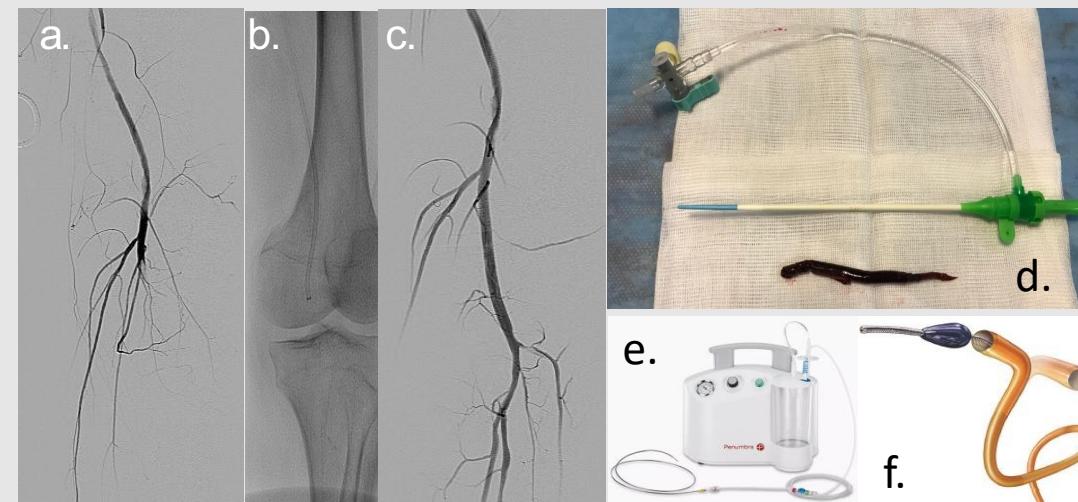
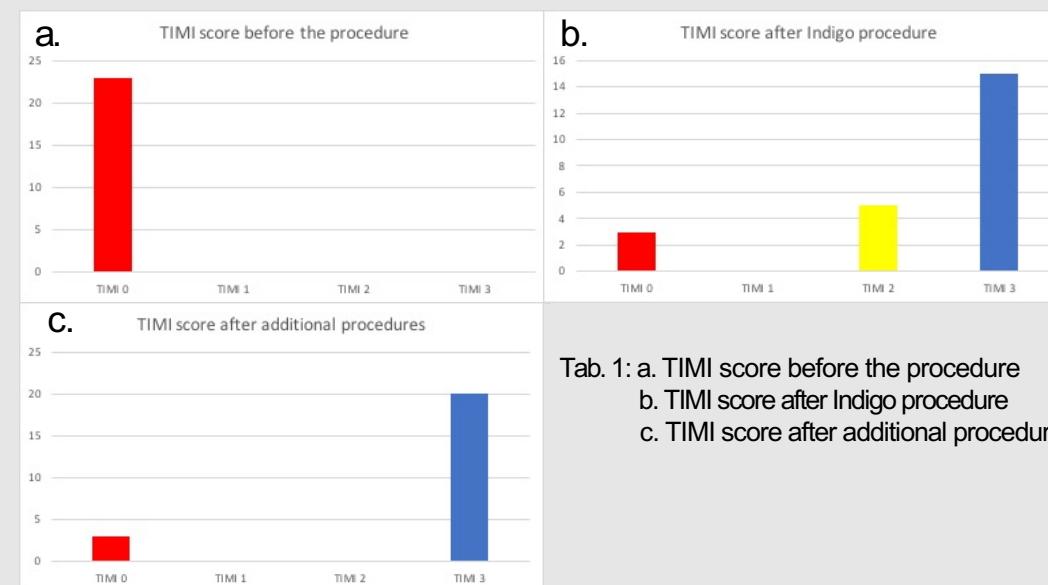


Fig. 1: a. preliminary angiography shows occlusion of the left popliteal artery from its P2 segment
 b. Penumbra Indigo System CAT8 was positioned with its distal tip near the occlusion
 c. Control angiography demonstrates restored patency of the popliteal artery with opacification of the leg vessels
 d. The artery was occupied by a long thrombus removed with a single passage of the catheter
 e. Penumbra aspiration pump
 f. CAT8 with dedicated separator



Tab. 1: a. TIMI score before the procedure
 b. TIMI score after Indigo procedure
 c. TIMI score after additional procedures