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Poor Inter-observer Agreement on the TASC II Classification of Femoropopliteal Lesions☆

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Abstract *Objectives:* This study aims to evaluate the reproducibility of femoropopliteal TASC II classification and to analyse the influence of an educational intervention on inter-observer agreement.
Design: This is a validation study.
Materials: This study included 200 consecutive angiograms of femoropopliteal arterial lesions.
Methods: Seven investigators evaluated the first 100 angiograms, independently aided by the available TASC guide. Thereafter, the intervention included a discussion of the 25 most problematic cases, initially by a panel of 22 vascular surgeons, and later by the seven investigators to clarify grading principles. In the second stage, the 100 remaining cases were evaluated independently. A multi-rater variation of Brennan and Prediger's free-marginal kappa (κ_{free}) was used to calculate inter-observer agreement.
Results: There were lesions not fitting any of the TASC classes. Total agreement among all seven investigators was reached in 7% and 19% of the cases before and after the intervention, respectively. In the first stage, κ_{free} was 0.32 between all observers (range between two observers $\kappa_{free} = 0.11–0.54$). The intervention increased the agreement to $\kappa_{free} = 0.49$ (range: 0.20–0.56). Agreement between the two observers was 38–69% (mean 49%) before the intervention and 51–73% (mean 61%) thereafter.
Conclusions: TASC II classification for femoropopliteal lesions allows individual interpretations, and the common use of this classification as a basis for decision making and reporting outcomes could therefore be questioned.

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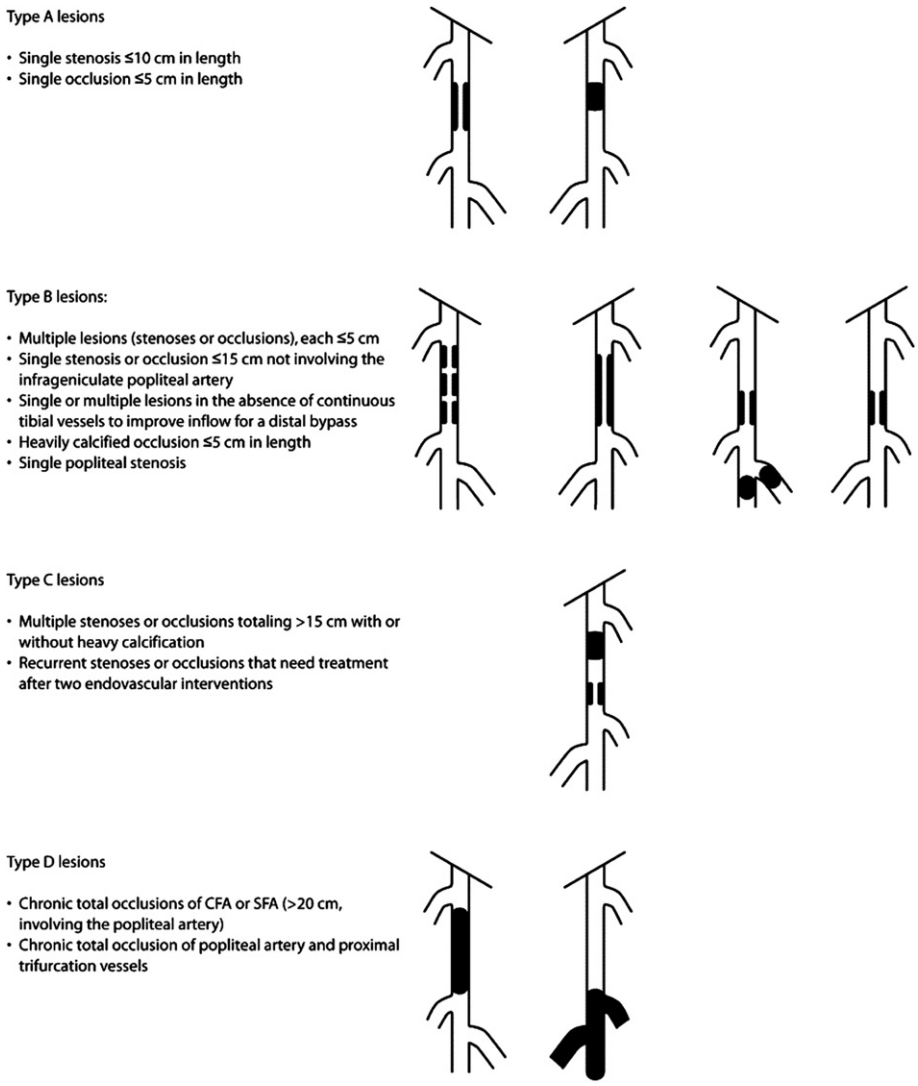

Figure 1 TASC II classification.

The TransAtlantic Inter-Society Consensus for the management of peripheral arterial disease (TASC and TASC II[1,2]) aims to recommend the preferable methods of revascularisation for different arterial lesions by decreasing variation in the management of individual patients with identical conditions. The TASC II classification is widely used as a contemporary guide to aid in decision making concerning lower limb ischaemia when choosing between endovascular and surgical techniques. TASC I and II classifications are used in scientific reports as a means to characterise patient populations and treated lesions[3–5] as well as in reporting the outcome of a specific intervention in stratified groups of lesions.[6,7] However, the present TASC II classification may cause confusion, as the grading of lesions can be cumbersome, allowing individual interpretations of a number of lesions. This, of course, diminishes the applicability of the classification.

To the best of our knowledge, there are no published papers on inter-observer agreement on the TASC classifications. The aim of this study was to evaluate the reproducibility of femoropopliteal TASC II classification between vascular surgeons and interventional radiologists, in addition to analysing the influence of an educational intervention on inter-observer agreement.

Materials and methods

This validation study comprised 200 consecutive angiograms on femoropopliteal arterial lesions treated with endovascular procedures during 2005—2006 at the Department of Vascular Surgery at the Helsinki University Central Hospital. During the first stage, two senior vascular surgeons, two vascular surgical trainees, two angioradiologists and one angioradiologist in training evaluated the first 100 angiograms independently in one session aided by the TASC II guide available (Fig. 1). Thereafter, the intervention included a discussion of the 25 most controversial cases firstly by a panel of 22 vascular surgeons and vascular trainees, and, secondly, by the seven investigators in order to clarify the cases, to agree on TASC II classification principles and to discuss cases not directly belonging to any the of TASC II classes. In the second stage, the 100 remaining cases were evaluated independently by the seven investigators in a manner identical to the first stage.