

## Brödel's line: an anatomo-radiological study of the avascular kidney's plane

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The division in anterior and posterior branches of the renal artery implies the existence of an avascular plane, the so call Brödel's line (1). This longitudinal zone is described along the convex renal border (2) or just posterior to the lateral aspect of the kidney (3). The aim of this study was to describe the extension of Brödel's line with reference to the renal segments. 12 kidneys were injected with acrylic resins to obtain vascular corrossions casts that were analyzed also with computed tomography. We observed the presence of a relative avascular plane in all vascular casts, located on the posterior surface, ascribable to the Brodel's line. In 33% of cases the line extended from the apical to the inferior segments, in the 33% of cases it extended from the superior to the inferior segments, in 33% of cases it is limited to the superior and middle segments. Since the Brödel's line corresponds with the plane of the anterior surface of the posterior hilar calyces, the knowledge of its extension is relevant from the surgical point of view: this area permits a relatively safe access route to the pelvicalyceal system for nephrostomy insertion and incision within this plane results in significantly less blood loss than outside this plane.

### References

- [1] Brödel M. (1901) The intrinsic blood-vessels of the kidney and their significance in nephrotomy. Johns Hopkins Hospital Bulletin; 118:10-3.
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### Keywords

Brödel's line; kidney; anatomy; arteries; computed tomography.