# Correspondence

(The Editors do not hold themselves responsible for opinions expressed by correspondents)

## Renal artery embolisation prior to radical nephrectomy for renal cell carcinoma: when, how and why?

The Editor — Sir,

We read with great interest the article by May et al [1] published recently in BJR and reporting pre-operative renal artery embolisation (PRAE) in patients with radical nephrectomy for renal cell carcinoma. We have several comments. Since the first report of renal arterial embolisation in the management of renal cell carcinoma, its role in the therapeutic armamentarium has been debated. The results of the present study indicate that PRAE does not improve the survival of patients after radical surgery; however, conclusions from this retrospective study must be drawn with caution. First, median follow-up was significantly lower ($p<0.01$) in the surgical group (62 months) than in the pre-operative embolisation group (100 months). Second, many advances in medical management, surgical approaches and interventional devices and techniques have been made since the first period of investigation of this study. Although we are not able to distinguish with certainty the effect of embolisation on the course of the disease, observation data from many urologists testify that many patients are helped by angioinfarction. According to the literature, complete PRAE is now recognised as a technique that facilitates nephrectomy in selected patients; in particular, intra-operative blood loss and the duration of surgery are reduced, thus decreasing blood transfusion requirements [2, 3]. The benefits of pre-operative infarction include notably decreased tumour vascularity. This occasionally allows the renal vein to be ligated early on in the operation, before the renal artery has been controlled, and thus alleviates some of the technical difficulties of nephrectomy in patients with tumour involvement of the renal hilus. Unfortunately, the mean operative time neither in the surgical group nor in the pre-operative embolisation group is specified in the article by May et al [1]. Furthermore, we are surprised in this study that blood transfusion requirements were significantly higher in the pre-operative embolisation group (61% *vs* 24%, $p<0.01$). One explanation could be the use of resorbable material (gelfoam) in combination with coils as embolic agents. Cumulative experience with *n*-butyl cyanoacrylate glue suggests that it is currently the embolisation material of choice for pre-operative renal devascularisation [4, 5]. This material allows rapid and definitive distal occlusion of a voluminous vascular bed and causes necrosis in perivascular tissue [6]. Lastly, we are also surprised at the high rate (89%) of post-embolisation syndrome with pain and fever reported by May et al [1]. In our experience, this rate can be much lower [4]. Two factors could contribute to this discrepancy. First, surgery was delayed for 2–3 days in most patients (range 1–12 days). We now know that the optimal delay between embolisation and operation is probably less than 1 day [2]. Thus, the distress caused by the post-infarction syndrome can be reduced. In our institution, the surgical intervention takes place within 24 h of PRAE. Second, pre-medication and symptomatic treatment, in co-operation with anaesthetists, are particularly important for this endovascular procedure. In our department, pain is controlled through intravenous injection of non-steroidal anti-inflammatory agents, level 2 analgesics and anti-spasmodic agents, as well as by a patient-controlled analgesia (PCA) pump of morphine chlorhydrate that is maintained post renal artery embolisation. The detailed protocol used for adjuvant medications is not precisely described in the present study. In conclusion, either controlled trials or parallel prospective cohort studies should be undertaken to compare the treatment of selected locally advanced renal carcinomas with and without embolisation. However, we believe that the main benefit of PRAE is to facilitate surgery by reduction of blood loss in selected patients. In this setting, embolisation should be performed preferably with glue and less than 1 day before surgery.

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