PREOPERATIVE RENAL TUMOUR EMBOLISATION REVISITED


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Background

- Renal artery embolization prior to surgery for renal tumours has been utilised for a number of years however definitive evidence of its benefits remain elusive.
- As a result of continued development, the procedure now has minimal morbidity and a high technical success rate.
- Additionally, there is evidence that decreased immune surveillance as a consequence of blood transfusions is associated with cancer recurrence and progression1,2.
- We studied the outcomes of the procedure in our institution.

Conclusions

- Renal artery embolisation is a safe, effective treatment that is well tolerated with few complications.
- We have shown evidence of benefit in terms of transfusion requirements and blood loss for preoperative embolization of renal tumours in our cohort.
- A randomised controlled trial is warranted to definitively prove the efficacy of the technique.

At A Glance

- Renal cell carcinoma is the most common malignant renal cell tumour. Partial nephrectomy to preserve renal function is preferred over radical nephrectomy if technically feasible.
- No prospective randomised controlled trials have been performed concerning preoperative renal artery embolisation.
- The evidence underlying whether the technique confers additional survival is controversial.
- A large recent trial of 189 matched patients undergoing preoperative embolisation failed to find any difference in factors including blood loss, surgical complications, blood transfusion requirements and survival3.

Technique

- Arterial access is usually via the right common femoral artery, with placement of a 5 Fr vascular sheath.
- Aortography is used to locate the renal artery origin.
- Catheterisation is usually performed with shaped catheters, for example Cobra or Simmons.
- There is a wide variety in treatment agents, including Gelfoam, coils, ICBA, thrombin, and ethanol.

Materials & Methods

Data

Prospective database is kept of consecutive patients undergoing nephrectomy for cancer at Frimley Park Hospital.

Time Period

2009 - 2015 at Frimley Park Hospital

Analysis

Pre-operative, intra-operative and post-operative factors recorded. Comparison against a comparable subset who did not have embolisation.

Results

Note: Baseline characteristics including age, gender, weight and stage of tumour was not statistically different between groups.

<table>
<thead>
<tr>
<th>Patients (n)</th>
<th>Embolisation: 18</th>
<th>Non-embolisation: 36</th>
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<tbody>
<tr>
<td>Mean age</td>
<td>61.5 years</td>
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<td>Technical success</td>
<td>95% (17/18) - Not possible to selectively catheterise the upper pole renal artery.</td>
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<tr>
<td>Weight of specimen</td>
<td>Embolisation: 1016 g</td>
<td>Non-embolisation: 1239 g</td>
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<td>Mean intraoperative blood loss</td>
<td>Embolisation: 1354 ml</td>
<td>Non-embolisation: 1571 ml</td>
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<td>Mean transfusion requirements</td>
<td>Embolisation: 1.3 units</td>
<td>Non-embolisation: 2.3 units</td>
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<td>Postoperative length of stay</td>
<td>Embolisation: 8.5 days (2-10 days)</td>
<td>Non-embolisation: 6 days (4-32 days)</td>
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References