Small Renal Masses: The Case for Active Surveillance

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The Old is New Again!

- Stage A1 prostate cancer (well differentiated, focal disease on TURP) does not require treatment. Now: "Active Surveillance"
- Renal adenoma less than 3 cm are "benign." Now: small renal masses (SRM) do not necessarily require treatment, i.e: Active Surveillance.

Small Renal Masses (SRM)

- Imaging: >2/3 renal tumors found incidentally
- 85% ↑ renal ca (RCA) 1994-2002; 330% ↑ in 2-4cm tumors.
- Mortality not increasing despite $\boldsymbol{\uparrow}$ incidence
- Renal adenoma, indistinguishable from renal carcinoma, found in 7- 22% at autopsy*
- Increased incidence SRM with age, most >65
- >30% of those >70 die of unrelated causes <5 years post RCA surgery

Jewitt, Urol. Clin N Amer. 2008; * Bonsib, GU Onc. 1985

Natural History of SRM

- 20% of solid small renal masses are BENIGN!
- Carcinomas less than 3cm have a remarkably benign course: <1% progressed (2/200+, one with 1.3cm/yr ↑)
- Mean growth in 234 SRM: 0.28cm /year
- Lack of growth does not prove SRM is benign, but rapid growth risks progression
- Growth inversely proportional to age, supporting intervention in younger patients
- First do no harm! What about biopsy?

Jewitt, Urol. Clin N Amer. 2008; Crispen, BJU Int. 2007

Point-Counterpoint: Small Renal Masses Best to Watch

Needle Biopsy of SRM

- Old Concept: Risk of bleeding, risk of seeding; necrosis, false negative biopsy common.
- New Concept (the facts):
 - Small cores or FNA rarely produce bleeding or AV fistula
 - Only 6 reported cases of tumor seeding (<0.01%); none recently with canula technique, small needles
 - FNA and core biopsies are accurate with experience:
 (97% sensitivity, 100% specificity)

Rodriguez, Sem Urol Oncol. 1995; Jewitt, Urol. Clin N Amer. 2008

Does Delay Affect Outcome? Rais-Bahrami: BJU Int. 103:1355-8, 2009

- 32 with SRM, mean 2cm; 5 yr follow
- 3 or more month delay (mean 16 months) in LPN compared with standard
- Mean growth .56cm/yr
- No increase in operative complications, blood loss or time.
- No local or distant recurrence

How Effective is Cryoablation of SRM? Stein: J Endourol. 22:2433-9, 2008.

- 30 SRM underwent lap cryoablation
- 84% had no enhancing mass at 3 months
- 90% by 6 months, only 1 (3%) of these 3 persisted by 9 months
- Lap partial nephrectomy on this mass showed no remaining carcinoma
- 100% short term (one year) complete response.
- Residual enhancement by 9 months may not indicate failure

Meta-analysis: Cryo vs RFA Kunkle: Cancer. 113:2671-80, 2008

- 47 series, 1375 SRM's
- Local progression: Cryo 5%, RFA 13% (p<.0001)
- Repeat ablation: 1% Cryo, 8% RFA (p<.0001)
- Metastasis: 1% Cryo, 2.5% RFA (p=0.06)
- Response criteria and short term follow up favor cryoablation over radio frequency ablation, though RFA is more frequently done percutaneously

Point-Counterpoint: Small Renal Masses Best to Watch

A Brief History of Renal Cancer, SRM, Surgery

- 1963: Robson demonstrates improved survival with radical nephrectomy. 1992: Aso reports 8% improved survival in incidental vs symptomatic masses demonstrated by ultrasound (but not IVP). Since RCC is only 2-3% of malignancy, routine US screening is not recommended, but many include renal evaluation in any abdominal US.
- any abdominal US. 1990's: Partial nephrectomy established as treatment of choice for SRM: 90-100% DSS, 0-7% local recurrence in 909 pts/17 series, 1986-2002. Survival equal in tumors 4 or less cm (T1a), significant reduction in renal insufficiency. Progress in PNs now appropriate for selected cases >4cm, with several studies showing equality to radical nephrectomy for T1b (4-7cm) tumors.
- 2000's: Lap partial nephrectomy (LPN) shown to provide equal efficacy and renal function compared with open (OPN) for tumors 7cm or less. 1800 pts, 3 yr DSS 99.3% (LPN, 99.2% OPN; renal function: 97.9 vs 99.6% in nonrandomized (therefore selected) series (Gill. J Uno1.178: 41-6, 2007). Operating time and blood loss less with LPN. Shorter hospital stay> decreased cost for LPN (without robot).
- 2006: Cryoablation for SNM: 5 year follow up shows 98% DSS in 66 pts (Hegarty). Percutaneous approach for posterior tumors shows minimal morbidity. Percutaneous RFA is less established, possibly less effective, but can provide good (83-100% at 20 month) DSS in SRM. 2005: Weld and Landman: Meta-analysis of RFA vs Cryo vs LPN: Local recurrence 7.9 vs 4.6 vs 2.7%; RFA not yet proven to be reliable; Recurrence less in <3.5cm tumors. (BJU int. 96:1224-9).

Conclusions

- Increased imaging in our aging population may create an epidemic of SRM (up to 22% at autopsy)
- 1/5 SRM are totally benign, and biopsy is now safe and ٠ accurate.
- Small adenocarcinomas are low grade & not aggressive
- · Incidence increases with age, as does co-morbid conditions and risk of dying from other causes
- With only 1% progression for SRM, those with a life • expectancy of 5 or less years may benefit from active surveillance, which should clearly be offered