Introduction and Objective: The clinical study of an adrenal mass usually includes imaging studies (CT, MRI), biochemical testing (urinary catecholamines/metanephrines) and metaiodobenzylguanidine scintigraphy (MIBG). Our aim is to determine the utility of MIBG in the diagnosis and follow-up of this pathology.


Results: Mean patient age was 47 years. 64.4% were symptomatic. Imaging diagnosis was by ultrasonography in 22.7%, CT in 72.7% and MRI in 4.5%. Urinary catecholamines/metanephrines were measured in 97.7% of patients (sensitivity 88.6%). Prior to surgery, 75.5% of patients underwent MIBG (sensitivity 94.1%). Of the 5 patients with normal urinary catecholamines/metanephrines levels, high suspicion level prompted MIBG use in 2 with a positive result in both; in the other three, diagnosis was made through analysis of the surgical specimen. Despite not receiving treatment before surgery, these patients had no intraoperative complications. Mean tumor size was 6.9 cm (range 1 to 35). Malignancy was observed in 17.8%. Twenty-nine patients (64.4%) had one or more complications: 9 intraoperatively (20%), 15 anesthetic (33.3%) and 16 postoperatively (35.5%). In these groups, the most frequent complication was injury to other organs (5 cases), hypotensive crisis (11 cases) and fever (8 cases), respectively. MIBG revealed metastatic disease prior to surgery in 4.4% of patients. During follow-up MIBG detected local recurrence in 6.6% and metastatic recurrence in 6.6% of patients.

Conclusions: In the study of an adrenal mass, we suggest use of CT and urinary catecholamines/metanephrines. If the latter are positive with an imaging study compatible with pheochromocytoma, MIBG is not necessary. If urinary catecholamines/metanephrines are negative, there are no clinical signs and there is no suspicion of pheochromocytoma, MIBG is not necessary either. Finally, if suspicion of pheochromocytoma is high, with no conclusive imaging studies and negative urinary catecholamines/metanephrines, MIBG might prove a useful diagnostic tool. The use of MIBG also allows diagnosis of local recurrence and metastatic disease during follow-up.

Results: In rats at baseline before obstruction, spontaneous peristaltic ureter pressure waves were recorded with mean minimum and maximum pressures of 18.9±4.2 and 33.9±7.7 cmH2O, respectively. Obstruction increased minimum and maximum pressures to 38.1±7.0 and 51.1±9.4 cmH2O but had no effect on MAP. Silodosin 0.1 and 0.3mg/kg reduced the minimum pressure after obstruction by 18.4±2.6 and 22.0±2.7%, respectively. Corresponding effects by tamsulosin 0.01 and 0.03mg/kg were 11.3±3.9 and 13.7±5.3%. Maximum pressure was reduced by 20.7±4.5 and 39.0±3.8% by silodosin (0.1 and 0.3mg/kg) and 15.3±7.5 and 19.5±7.6% by tamsulosin (0.01 and 0.03mg/kg). Silodosin and tamsulosin reduced MAP by 9.1-10.9 and 16.5-22.3%, respectively. Maximal inhibitory effects of 74±3 % (silodosin) and 24±15% (tamsulosin) on nerve-induced contractions of the human ureter were recorded at 100μM.

Conclusions: At doses approximately corresponding to human therapeutic use, silodosin reduced pressure in vivo of the obstructed rat ureter with less effect on blood pressure than tamsulosin. In addition, silodosin had better inhibitory efficacy than tamsulosin on nerve-mediated contractions of isolated human ureters.
(29-62). In group 1 kidney was covered with a cocoon and cooled with 250-500 ml frozen Ringer's solution to 20-25°C for 10 minutes after closing renal artery. The renal functions were evaluated with the serum creatinine levels and by Tc-99m-DMSA scintigraphy, preoperatively and postoperatively 1st day, 15th day, 6th month and 12th month, respectively. The differences between groups were tested with Mann Whitney U test. The differences between two periods were tested with Wilcoxon Signed Rank test and the difference between more than two periods was tested with Friedman test.

**Results:** Group 1 and group 2 had similar characteristics for risk factors, age, tumor size, ischemia duration, operation duration. Bleeding was more in group 2 but it was not statistically significant. There was no significant difference in terms of serum creatinine levels between the groups, preoperatively and postoperatively 1st day, and 15th day, 6th month, 12th month. Whereas there was a significant difference in the uptake of DMSA of the operated kidney between the preop and postop periods. But this marked difference wasn’t observed between the postop first day, 15th day, 6th month, 12th month.

**Conclusion:** Both types of ischemia with a period of average half an hour have similar effects on the residual renal functions after nephron sparing surgery.

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**MP-02.05**

**Laparoscopic Adrenalectomy for Adrenal Metastases: Points of Controversy**

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**Introduction and Objective:** Laparoscopic adrenalectomy for adrenal metastases is controversial. To the best of our knowledge, there have so far been no reports describing the indication related to the tumor doubling time (TDT) of adrenal metastases.

**Materials and Methods:** A series of 10 patients undergoing laparoscopic adrenalectomy for adrenal metastases (2001-2010) were examined. We measured TDT, tumor sizes and disease free interval (DFI) of adrenal metastases. Metastases were regarded as synchronous (<6 months), or metachronous (>6 month), depending on the interval after primary surgery. We evaluated the indication of laparoscopic surgery for adrenal metastases.

**Results:** Histopathological findings revealed renal cell carcinoma (RCC, n=5), hepatocellular carcinoma (HCC, n=2), urothelial carcinoma, non-small-cell lung cancer and endometrial adenosarcoma (one each). The mean tumor size was 5.4 (2.5-7.7) cm. The mean overall survival was 36.7 (8-80) months for all patients. The median TDT as calculated using the method originally described by Schwartz was 82 (13-614) days. The mean TDT of RCC was 328.3 (56-614) days. On the other hand, the mean TDT of adrenal metastases from other malignancies except RCC was 36.2 (13-82) days. Adrenal metastases with short TDT (<82 days) required longer operative time (mean 239.8, 200-278 minutes) than those with relatively long TDT (82 days) (mean 190.3, 179-200 minutes) (P<0.015). Two patients required open conversion, consisting of one of RCC and the other from HCC. Both adrenal metastases had short TDT. One adrenal metastases was synchronous. This patient had HCC and died of cancer 8 months after surgery. Tumor size was not related with overall survival and open conversion. There was no relationship in both of survival and conversion for tumor size of all patients.

**Conclusions:** Laparoscopic adrenalectomy for adrenal metastases is feasible regardless of TDT and tumor size. The adrenal metastases with short TDT might require longer operative time due to the presence of dense adhesion and numerous feeding vessels. We therefore strongly recommend performing periodic surveillance CT to estimate TDT before adrenalectomy if the primary lesion was non RCC.

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**MP-02.06**

**Surgery of Renal Tumor with Intratumoral Tumor Thrombi Using the Hypothermic Circulatory Arrest**

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**Introduction and Objective:** We performed tumor thrombi removal and nephrectomy in 8 patients with renal tumor accompanied by intratumoral tumor thrombi using hypothermic circulatory arrest. Herein, we describe treatment outcomes.

**Materials and Methods:** Surgical procedures: Laparotomy was performed after Mercedes incision. The renal artery was incised, and the region around the kidney, bilateral renal veins, and inferior vena cava were detached and taped. Subsequently, median sternotomy was performed. After systemic heparinization, hypothermic treatment was started by extracorporeal circulation. The hepatic caudate lobe was detached and moved during cooling. The aorta was blocked (typanic temperature: 20°C), and circulation discontinued by injecting cardioplegic solution. The atrium and inferior vena cava were incised, and the kidney was excised with tumor thrombi. The atrium and inferior vena cava were restored. Warming was performed by resuming ex-