

based on this classification. Significant anatomic landmarks were pointed out. Steps were;

1. Anterior abdominal wall and trocar positioning,
2. Fascia pelvis (endopelvic fascia) and incision of fascia pelvis,
3. Detachment of puboprostatic complex,
4. Urethral sphincteric complex, preservation of continence unit,
5. Anatomic apical dissection of prostate and urethra,
6. Fascia rectoprostatica (Denonvillier fascia), dissection of posterior part of prostate,
7. Neurovascular bundle, pedicle dissection, pelvic plexus related with erectile function preservation.

**Results:** In steps, important anatomic landmarks were:

1. linea alba, linea arcuata (arcuate line), linea semilunaris, umbilicus, spina iliaca anterior superior (anterior superior iliac spine), m. rectus abdominis (rectus abdominis muscle), a. and v. epigastrica superior – inferior (superior and inferior epigastric artery and vein), n. subcostalis (subcostal nerve);
2. fascia pelvis parietalis (endopelvic fascia), arcus tendineus, fascia obturatoria internus (internal obturator fascia), fascia iliaca (iliac fascia);
3. ligamentum puboprostaticum (puboprostatic ligament), plexus venosus dorsalis (Santorini plexus), fibromuscular and soft tissue, symphysis pubis (pubic symphysis), detrusor apron, vena dorsalis profunda penis (deep dorsal vein of penis), plexus venosus vesicalis, plexus venosus prostaticus;
4. M. sphincter urethrae internus-externus (external-internal urethral sphincter);
5. plexus venosus dorsalis (avoid injury), M. levator ani, neurovascular bundle (avoid injury), smooth muscle of the urethra;
6. fascia rectoprostatica, posterior part of prostate, vesicula seminalis, perirectal fatty tissue;
7. A. vesicalis inferior (inferior vesical artery), N. cavernosus penis (cavernous nerve of penis), a. and v. capsularis, pelvic plexus, lateral pelvic fascia, levator fascia (interfascial dissection), fascia periprostatica (periprostatic fascia) (intrafascial dissection), capsula prostatica (prostatic capsule).

**Conclusions:** Focusing on anatomy of laparoscopic radical prostatectomy with suitable terminology might be the gold standard way of learning for this difficult surgical technique.

## S94

### Inguinal hernia in men undergoing sectio alta surgical approach

S. Stavridis\*, A. Mickovski, J. Janculev, S. Saidi, S. Dohcevi, L. Lekovski. *University Clinic Urology, Dept. of, Skopje, Macedonia*

**Introduction and Objectives:** Inguinal hernia is a common complication after radical retropubic prostatectomy. We analyzed its incidence in several lower midline incision procedures. We compared the incidence and tried to figure out where it is most frequent. We also analyzed the impact of simultaneous pelvic lymph node dissection, duration of surgery and patient age.

**Material and Methods:** The study included 120 men, aged 65 to 75 years. They were separated in three groups of 40 patients according the type of operation: radical prostatectomy, radical prostatectomy+lymph node dissection and open prostatectomy for benign prostatic hyperplasia, respectively. Postoperative anastomotic stricture and preoperative presence of incipient inguinal hernia were exclusive criteria. The risk factors were analyzed using a Cox proportional hazards model.

**Results:** The period of follow-up ranged from 10 to 137 months, with a median of 64 months. The incidence of inguinal hernia was 10% (4 of 40), 15% (5 of 40), and 2.5% (1 of 40) in radical prostatectomy, radical prostatectomy+lymph node dissection and open prostatectomy for benign prostatic

hyperplasia groups, respectively. Multivariate Cox proportional hazards analysis demonstrated that open RRP, with or without performed lymph node dissection were significant risk factors for the development of inguinal hernia. The operative time and patient age showed no significant impact on the inguinal hernia appearance in our study group.

**Conclusions:** Inguinal hernia is an important postoperative complication in all lower midline incision procedures including radical retropubic prostatectomy. Simultaneous pelvic lymph node dissection, duration of surgery and age were not significant risk factors in this study. Urologists should recognize the inguinal hernia as one of the major late complications of section alta approach and examine the groin in the follow up period.

## S95

### Relationship between obesity and prostate cancer at the time of biopsy

G. Drenidis\*, J. Papazoglou, D. Savidis, G. Diamantis, G. Sakelariou, S. Leontis, A. Rempelakos. *Hippokrateion Hospital, Dept. of Urology, Athens, Greece*

**Introduction and Objectives:** To evaluate the relationship between the obesity and prostate cancer.

**Material and Methods:** From April 2006 and April 2009 864 asymptomatic men with rising PSA underwent extended TRUS guided 12-cores biopsy and the histological examination was made by the same doctor from our pathology department. The median PSA was 5.75 ng/ml (ranged from 2.8 to 8.7) and the median age was 62 years (51–73 years). We have investigated the correlation, between obesity (Body Mass Index  $\geq 30$  kg/m<sup>2</sup>) and positive biopsy, Gleason score and PSA. The results analyzed with the SPSS 14.0 Edition.

**Results:** From our 864 patients, 147 (17%) had obesity (BMI > 30) and 717 (83%) had a normal B.M.I. Obese men had median PSA 5.65 ng/ml (8.6–2.7) and median age 60 years (51–71) and men with low Body Mass Index had median PSA 5.77 ng/ml (8.7–2.85) and median age 62.5 years (52–73). From the obesity group, we found prostate cancer in 45 (31%) patients. At the same time of the 717 patients with normal BMI 228 (32%) had prostate cancer ( $p=0.01$ ). From the 45 men of the obesity group, six (13%) had Gleason score >7 and from the 228 men with normal BMI only 15 (6.5%) had Gleason score >7 ( $p=0.001$ ).

**Conclusions:** From our results it seems that obesity was not statistical significant related with prostate cancer at the time of biopsy but obese men had a greater likelihood approximately twice to develop a high grade disease.

## Poster Session 7: Stone disease

Saturday, 10 October 2009, 09:40–11:40

### Room 1

## S96

### Epidemiologic characteristics of urolithiasis in Turkey: Update in 2009

M. Binbay<sup>1</sup>, A.Y. Muslumanoglu<sup>1</sup>, E. Yuruk<sup>2\*</sup>, T. Akman<sup>1</sup>, Y. Berberoglu<sup>1</sup>, T. Esen<sup>1</sup>, A. Tefekli<sup>1</sup>. <sup>1</sup>Haseki Training and Research Hospital, Dept. of Urology, Istanbul, Turkey; <sup>2</sup>Haseki Teaching and Research Hospital, Urology, Istanbul, Turkey

**Introduction and Objectives:** The worldwide prevalence and epidemiologic characteristics of urolithiasis appear to have changed in the last decades. The aim of the study is to update the current status of the disease in Turkey.

**Material and Methods:** A representative sample of 2468 persons aged between 18–70 years in 33 provinces of Turkey was enrolled in the cross-sectional study conducted with A&G, a professional market investigation company. Participants were

evaluated with face to face interviews by medical faculty students.

**Results:** Of the 2468 participants, 274 (11.1%) reported history of urinary stone disease diagnosed by a physician and additionally 52 (2.1%) had at least one episode of colic pain during their lifetimes. The family history of urolithiasis was found in 28.5% of first-degree relatives, compared to 4.4% in the stone-free participants ( $P=0.01$ ). The male: female ratio was 1:1 in participants with urolithiasis. The annual incidence of urolithiasis in 2008 was 2.6%. Comparing the other ethnic groups (Kurdish, Laz, Arabic, Georgian, etc), the population Turkish in origin had statistically significant decreased risk of having urolithiasis disease ( $p=0.006$ ). Though statistically not significant ( $p>0.05$ ), urolithiasis showed a trend toward a geographical distribution within the country where south-eastern Anatolia and Aegean regions have higher frequencies compared to Black Sea, central Anatolian and eastern Anatolian regions.

**Conclusions:** Urinary stone disease is a severe problem in Turkey with high prevalence and incidence rates which also significantly differ between ethnic groups. Moreover, current findings demonstrate a shift in the prevalence by gender of urolithiasis in the population.

### S97

#### The effect of metabolic syndrome components on urolithiasis: An epidemiological study

M. Binbay<sup>1</sup>, E. Yuruk<sup>2\*</sup>, T. Akman<sup>1</sup>, Y. Berberoglu<sup>1</sup>, M. Baykal<sup>1</sup>, A.Y. Muslumanoglu<sup>1</sup>, A. Tefekli<sup>1</sup>. <sup>1</sup>Haseki Training and Research Hospital, Dept. of Urology, Istanbul, Turkey; <sup>2</sup>Haseki Teaching and Research Hospital, Urology, Istanbul, Turkey

**Introduction and Objectives:** Components of metabolic syndrome, such as obesity, hypertension, and diabetes, are thought to be associated with urolithiasis, but limited published large-scale study has examined the association between metabolic syndrome and urolithiasis. We evaluated the relation between metabolic syndrome components and urolithiasis in a nationwide survey.

**Material and Methods:** A representative sample of 2468 persons aged between 18–70 years in 33 provinces of Turkey was enrolled in the cross-sectional study conducted with a professional investigation company. Participants were evaluated with face to face interviews by medical faculty students. Participants with urolithiasis history (Group 1) were compared participants without urolithiasis history (Group 2) in terms of hypertension, diabetes, body-mass index (BMI), waist size and trouser size using chi-square and odds ratio tests.

**Results:** Of the 2468 participants, 274 (11.1%) reported history of urinary stone disease diagnosed by a physician. The percentage of hypertension in participants with urolithiasis was significantly higher than participants without urolithiasis (16.9% & 34.3%,  $p:0.000$ , OR:3.0). In group 1, 14.2% and in group 2, 9% of participants had diabetes ( $p:0.001$ , OR: 1.83). The mean BMI was 27.2 and 25.2, respectively ( $p:0.01$ ). Participants with a BMI >30 had a 2.2 times fold increased risk of having urolithiasis. Moreover, mean waist size was significantly greater in participants with urolithiasis ( $p:0.000$ ). Those with waist size >100 cm had a 1.87 times fold increased risk of having urolithiasis. The mean trouser size was also significantly bigger in stone formers ( $p:0.003$ ).

**Conclusions:** Metabolic syndrome components are effective factors that play role on the development of urolithiasis.

### S98

#### Effect of the stone and patient related parameters on time duration of percutaneous nephrolithotomy operation and the length of hospitalization: Analysis of 1466 patients

T. Akman, E. Sari, M. Binbay, E. Yuruk\*, M. Kaba, R. Aslan, M. Baykal, O. Sarilar, A.Y. Muslumanoglu, A. Tefekli. Haseki Teaching and Research Hospital, Dept. of Urology, Istanbul, Turkey

**Introduction and Objectives:** To evaluation effect of the stone and patient related parameters on the duration of PNL and length of hospitalization (LOH).

**Material and Methods:** During 7 years period, the records of 1466 patients with renal calculi who underwent PNL were reviewed retrospectively. According to median, duration of operation time (median=60 min) and LOH (median=2 days) were categorized to two groups. Multivariate binary logistic regression analysis was used for detecting the effects of independent variables included patient age, sex, body mass index(BMI), history of SWL or open surgery, stone size and opacity, presence of hydronephrosis, localization and number of access, per-operative and post-operative findings and complications on the duration of PNL and LOH.

**Results:** The mean operation time and LOH were  $62.6\pm 25.4$  (10–210) min and  $2.9\pm 1.6$  (1–21) days respectively. Overall success was achieved in 84.7%. According to outcome of multivariate analysis, stone size ( $p<0.0001$ , OR=1.97), presence of hydronephrosis ( $p=0.014$ , OR=2.1), bleeding blurring the vision during operation ( $p<0.0001$ , OR=1.7) and number of access ( $p<0.0001$ , OR=1.4) are significant independent predictors on the duration of operation during PNL. On the other hand, BMI ( $p=0.008$ , OR=0.82), stone size ( $p=0.01$ , OR=1.2), number of access ( $p<0.0001$ , OR=1.7) and postoperative fever or sepsis ( $p=0.001$ , OR=4.5) are factors influencing LOH.

**Conclusions:** Stone size and access number significantly affect the both operation time and LOH. However, presence of hydronephrosis and bleeding blurring the vision influence the operation time. Present data demonstrated statistical relationship between BMI and LOH. Post-operative fever and sepsis after PNL significantly increase LOH.

### S99

#### Percutaneous nephrolithotomy for staghorn kidney stones in geriatric patients

B. Kuzgunbay\*, T. Turunc, U. Gul, O. Yaycioglu, M.T. Egilmez, H. Ozkardes. Baskent University, Dept. of Urology, Ankara, Turkey

**Introduction and Objectives:** To investigate the effect of percutaneous nephrolithotomy (PCNL) in the treatment of staghorn renal stones in geriatric patients.

**Material and Methods:** Between 2002–2009, 40 geriatric patients (22 male, 18 female), whose ages were above 65 years, underwent 42 PCNL operations for the treatment of staghorn kidney stones. The stone area, operation time, delta hemoglobin ( $\Delta$ Hb: calculated by subtracting postoperative Hb level from preoperative Hb level), stone clearance rates and additional treatment rates were investigated.

**Results:** The mean age of the patients was  $69\pm 3.5$  years. Twenty eight (70%) of the patients had at least one of the comorbide diseases including diabetes mellitus, hypertension, atherosclerotic coronary artery disease and five (11.9%) had initial ipsilateral renal surgery in history. The mean stone area was  $1668.5\pm 629.4$  mm<sup>2</sup>. Two patients underwent bilateral PCNL. The mean operation time was  $137.5\pm 33.9$  minutes and mean hospitalization time was  $3.9\pm 2.3$  days. Mean  $\Delta$ Hb was  $1.49\pm 1.29$  gr/dl. At the end of the operations, stone clearance rates were stone free in 12 (28.6%), clinically insignificant residue fragments in 8 (19%), clinically significant residue fragments in 22 (52.4%) renal units. Thus, 18 (45%) patients requested an additional treatment after PCNL; 3 (7%)