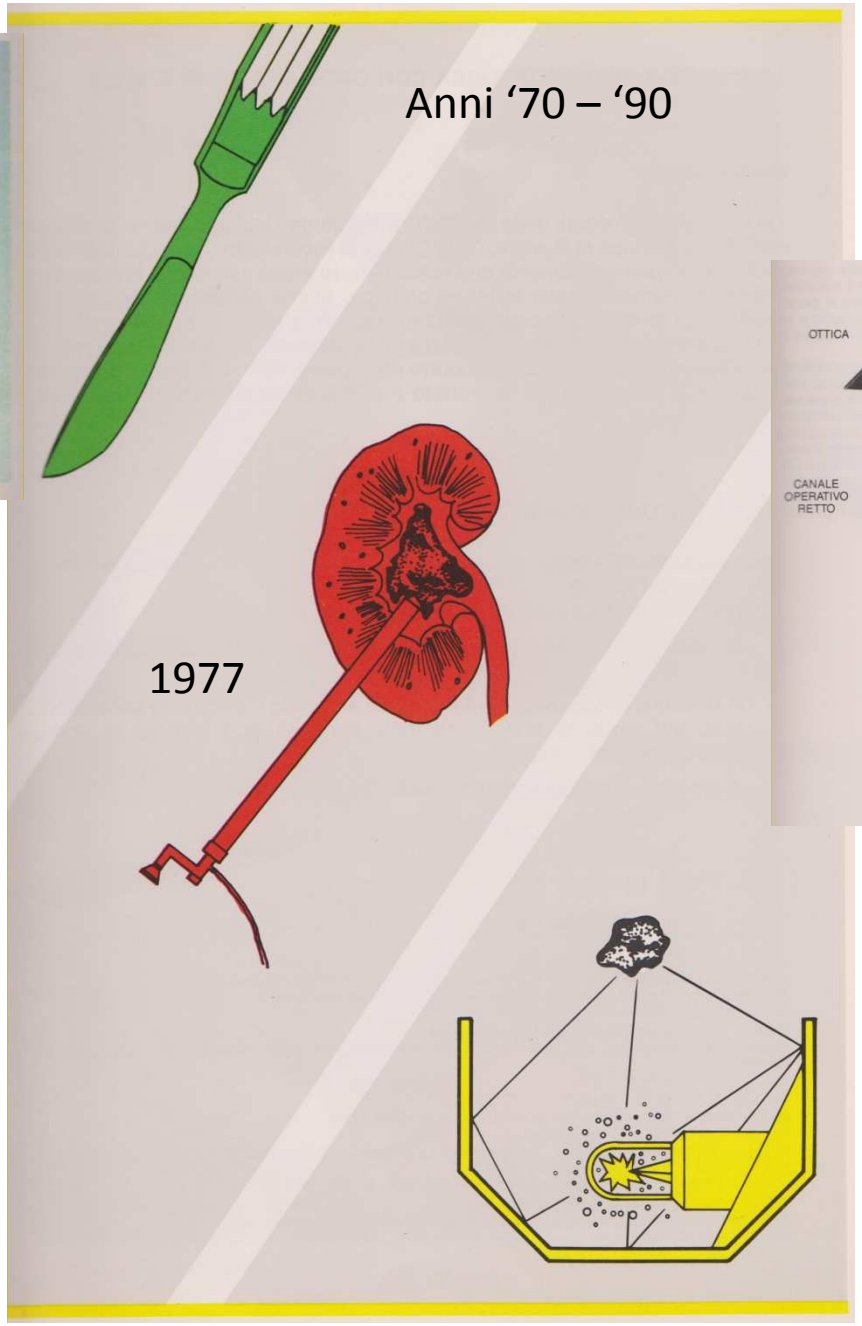
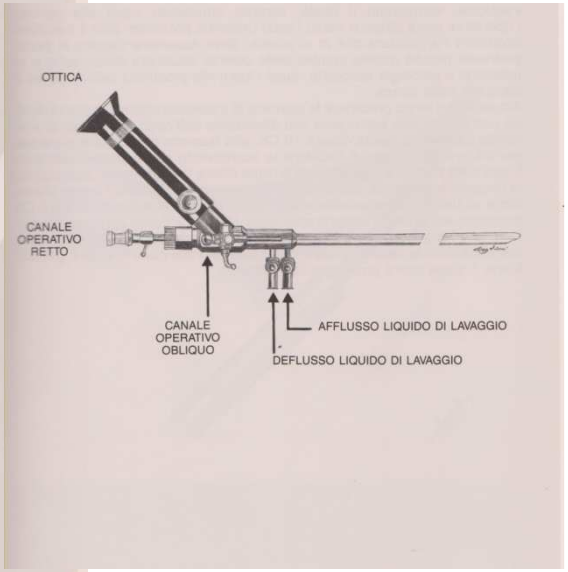
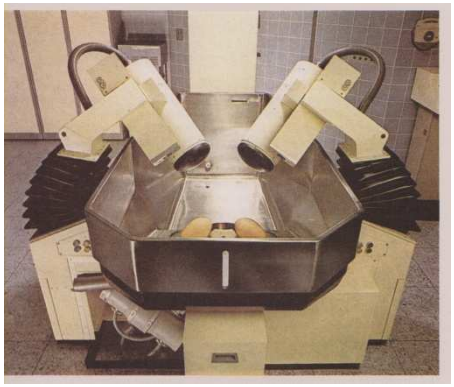
Anni ‘70 – ‘90

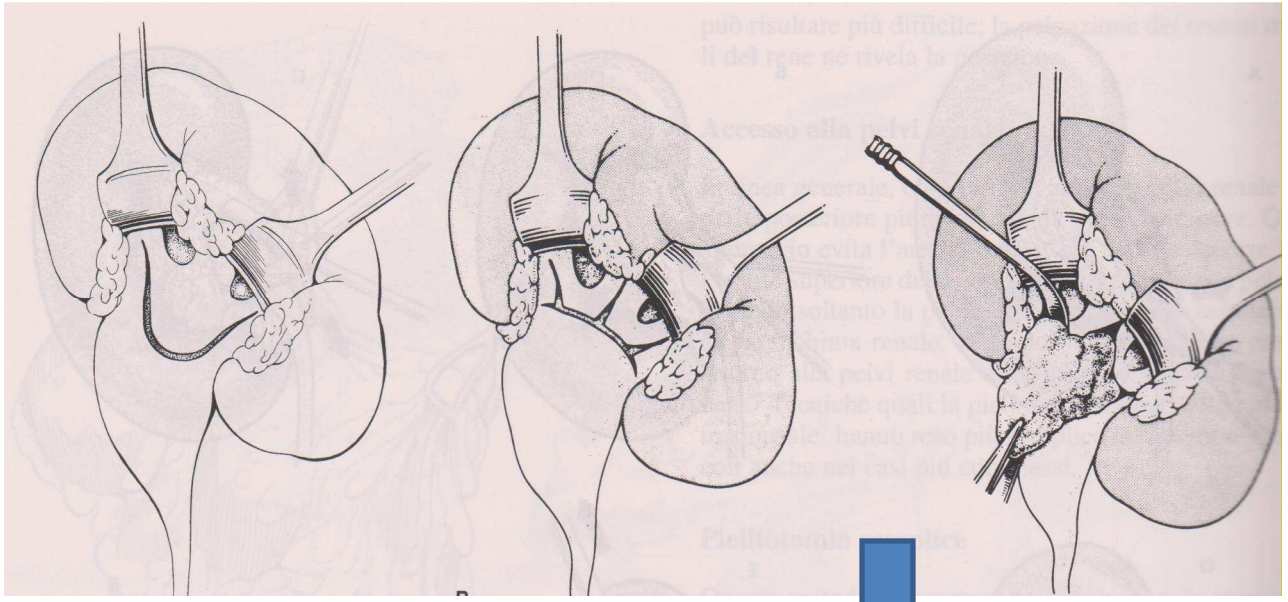


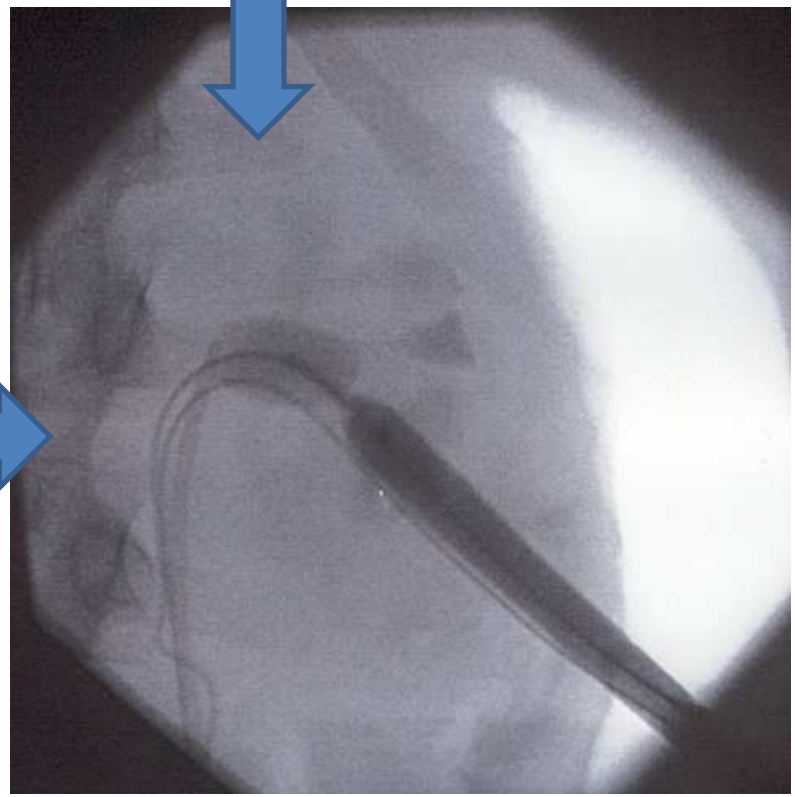
1977

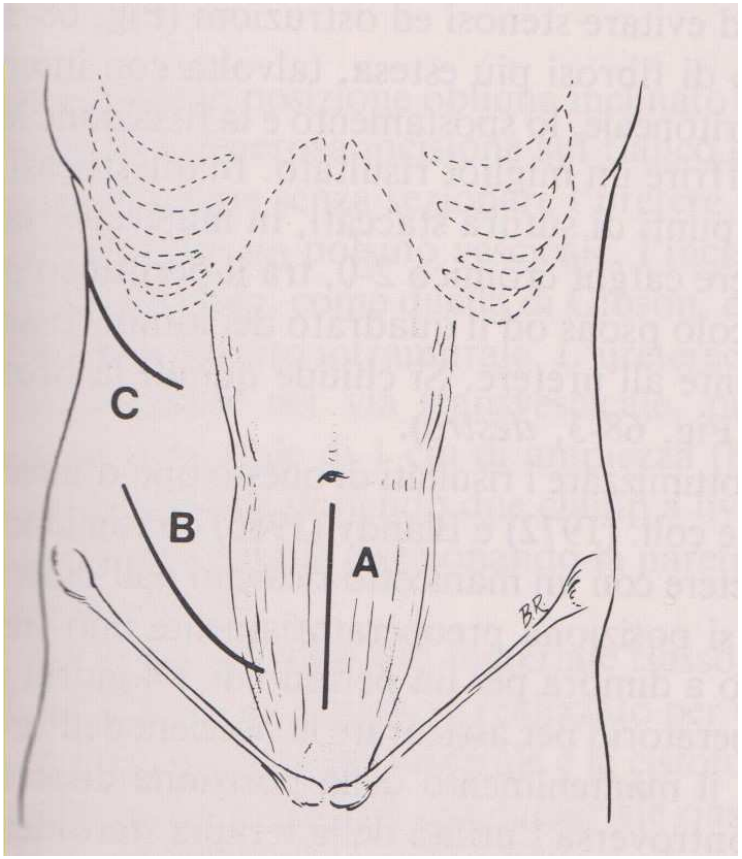


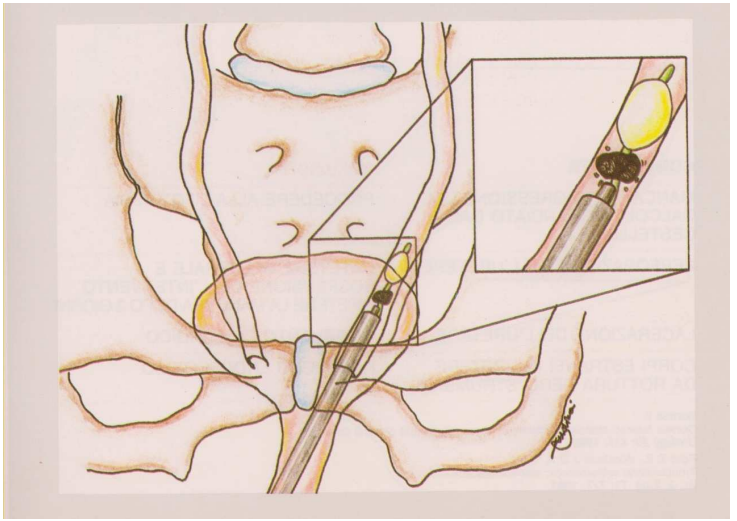



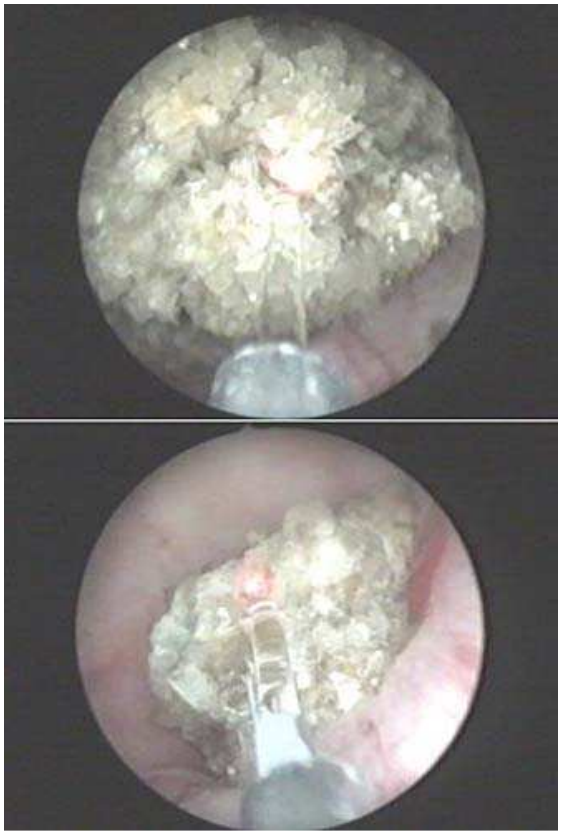
1981





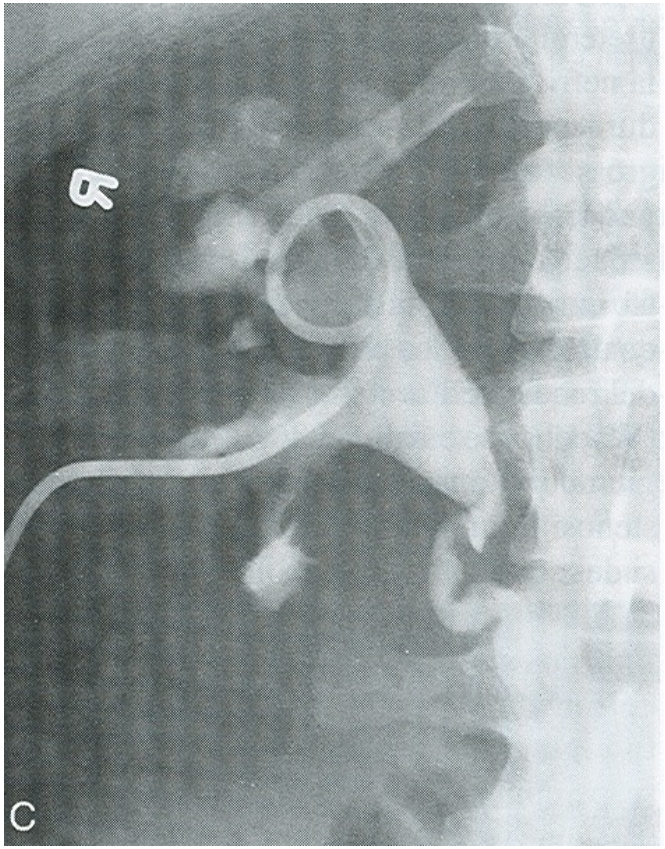


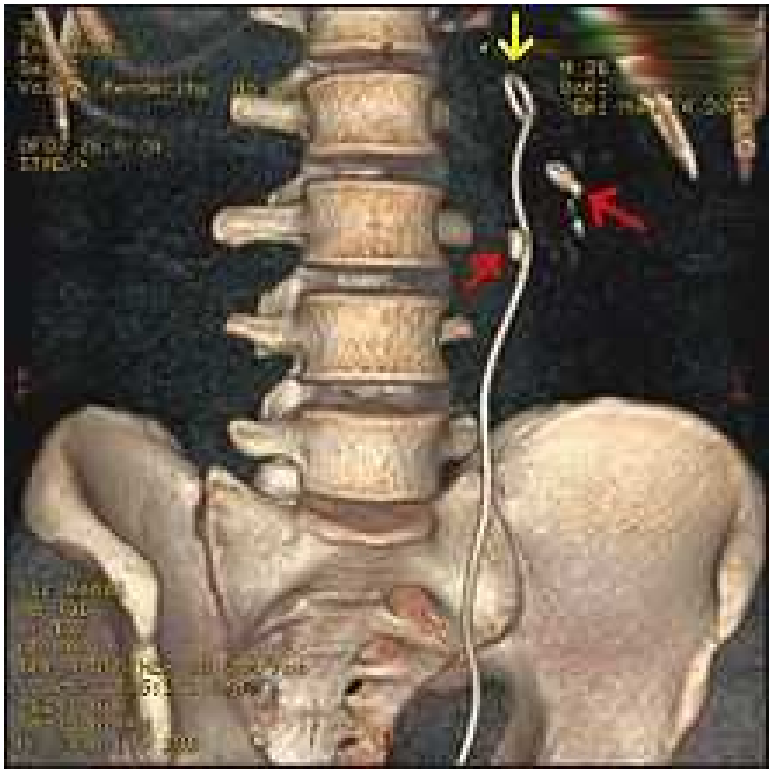





1979

| Recommendations | LE | GR |
|---|---|---|
| For sepsis with obstructing stones, the collecting system should be urgently decompressed, using either percutaneous drainage or ureteral stenting. | 1b | A |
| Definitive treatment of the stone should be delayed until sepsis is resolved. | 1b | A |



**DALLA CHIRURGIA TRADIZIONALE ALLE METODICHE “MININVASIVE”**

**DALLA CHIRURGIA “STONE FREE” ALLA “CHIRURGIA DISOSTRUTTIVA E DEBULKING”**

**STRETTA COLLABORAZIONE CON RADIOLOGIA E RADIOLOGIA INTERVENTIVA**

**DAL TRATTAMENTO IN UN TEMPO A TRATTAMENTI RIPETUTI**

**DA BASSA TECNOLOGIA A ALTISSIMA TECNOLOGIA (E ALTISSIMI COSTI)**

**DA CHIRURGIA GENERALE A SUPERSPECIALIZZAZIONE**

**MINORE ATTENZIONE ALLA TERAPIA MEDICA DELLA CALCOLOSI**

**MAGGIORE RISCHIO DI LESIONI IATROGENE**

| Diseases associated with stone formation |
| --- |
| Hyperparathyroidism |
| Nephrocalcinosis |
| Gastrointestinal diseases or disorders (e.g. jejuno-ileal bypass, intestinal resection, Crohn's disease, malabsorptive conditions, enteric hyperoxaluaria after urinary diversion and bariatric surgery) |
| Sarcoidosis |

## Indication for active stone removal and selection of procedure

Ureter:

- stones with a low likelihood of spontaneous passage;
- persistent pain despite adequate pain medication;
- persistent obstruction;
- renal insufficiency (renal failure, bilateral obstruction, single kidney).

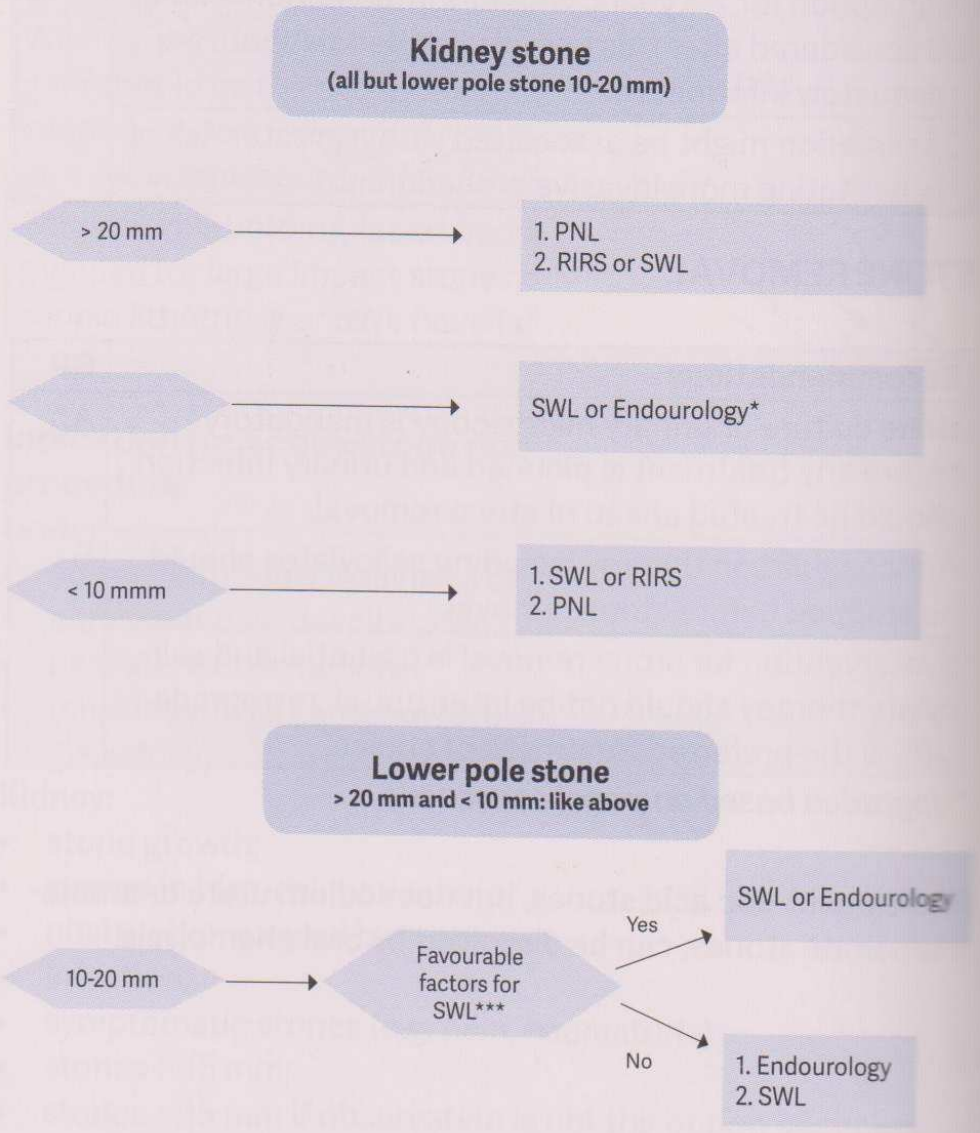
Kidney:

- stone growth;
- stones in high-risk patients for stone formation;
- obstruction caused by stones;
- infection;
- symptomatic stones (e.g. pain, haematuria);
- stones > 15 mm;
- stones < 15 mm if observation is not the option of choice;
- patient preference (medical and social situation);
- comorbidity;
- choice of treatment.

The suspected stone composition might influence the choice of treatment modality.

## Selection of procedure for active removal of renal stones**

### Fig. 1: Treatment algorithm for renal calculi



## Selection of procedure for active stone removal of ureteral stones (GR: A*)

| Stone location and size | First choice | Second choice |
|---|---|---|
| Proximal ureter < 10 mm | SWL | URS |
| Proximal ureter > 10 mm | URS (retrograde or antegrade) or SWL | |
| Distal ureter < 10 mm | URS or SWL | |
| Distal ureter > 10 mm | URS | SWL |

**Upgraded following panel consensus.*

| Recommendation | GR |
|---|---|
| Percutaneous antegrade removal of proximal ureteral stones is an alternative when SWL is not indicated or has failed, and when the upper urinary tract is not amenable to retrograde URS. | A |

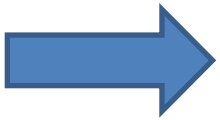
## CALCOLI TRATTO URETERALE ALTO: SWL vs URS

**CALCOLI < 20 mm:** **UGUALMENTE EFFICACI E SICURI**

**CALCOLI < 10 mm:** **UGUALMENTE EFFICACI**
**SWL MENO INVASIVA**

**CALCOLI da 10 a 20 mm:** **URS PIU' EFFICACE (meno ritratt amenti)**

***MA: URS POSSIBILITA' DI RETROPULSIONE DEL CALCOLO 3-15% URETERE DISTALE E 28-60% URETERE PROSSIMALE***



***NECESSITA' DI DISPORRE DI ENTRAMBE LE METODICHE***

## INDICAZIONI ALLA CHIRURGIA “OPEN”

-**CALCOLOSI A STAMPO COMPLESSA**

-**FALLIMENTO DEI TRATTAMENTI MININVASIVI**

-**ANOMALIE ANATOMICHE INTRARENALI**

-**RENE ECTOPICO**

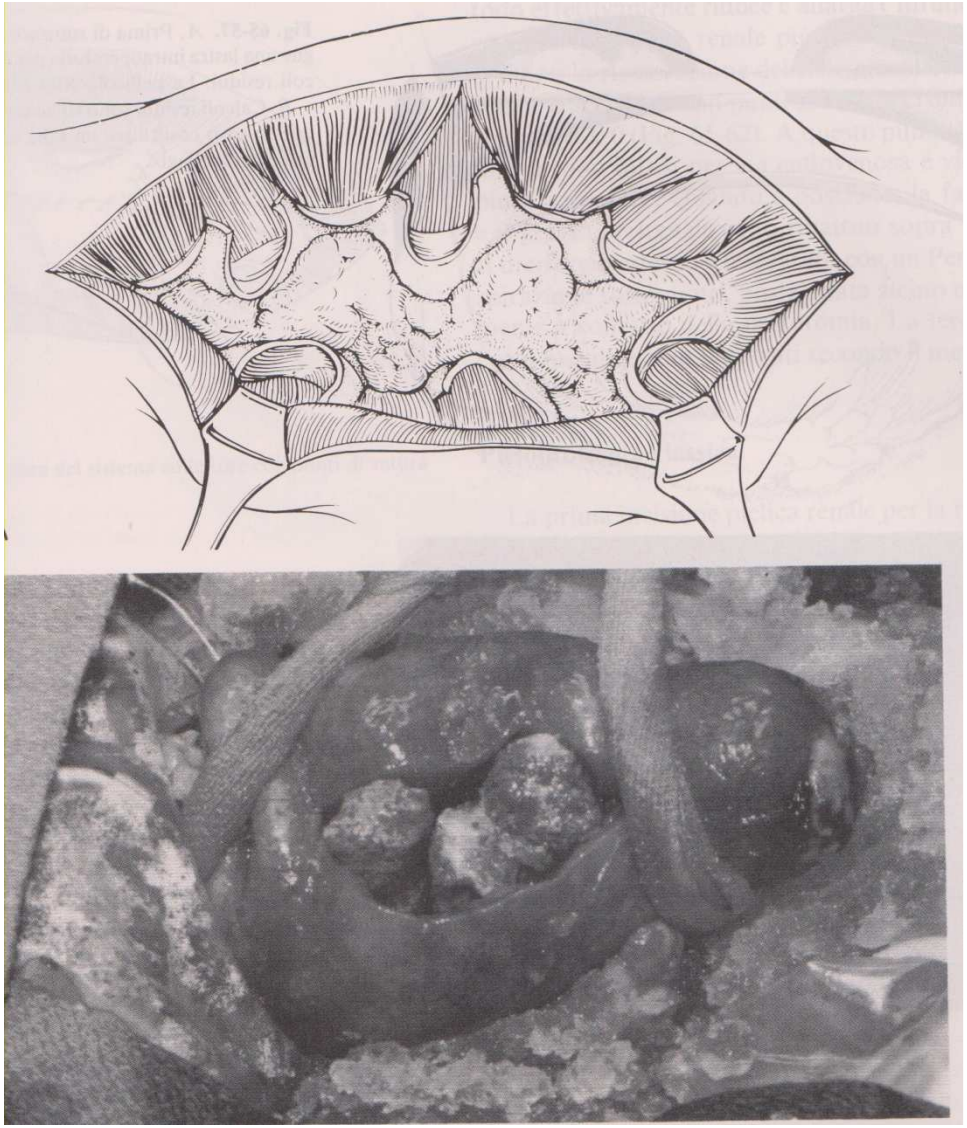
-**STENOSI DEL GIUNTO PIELOURETERALE**

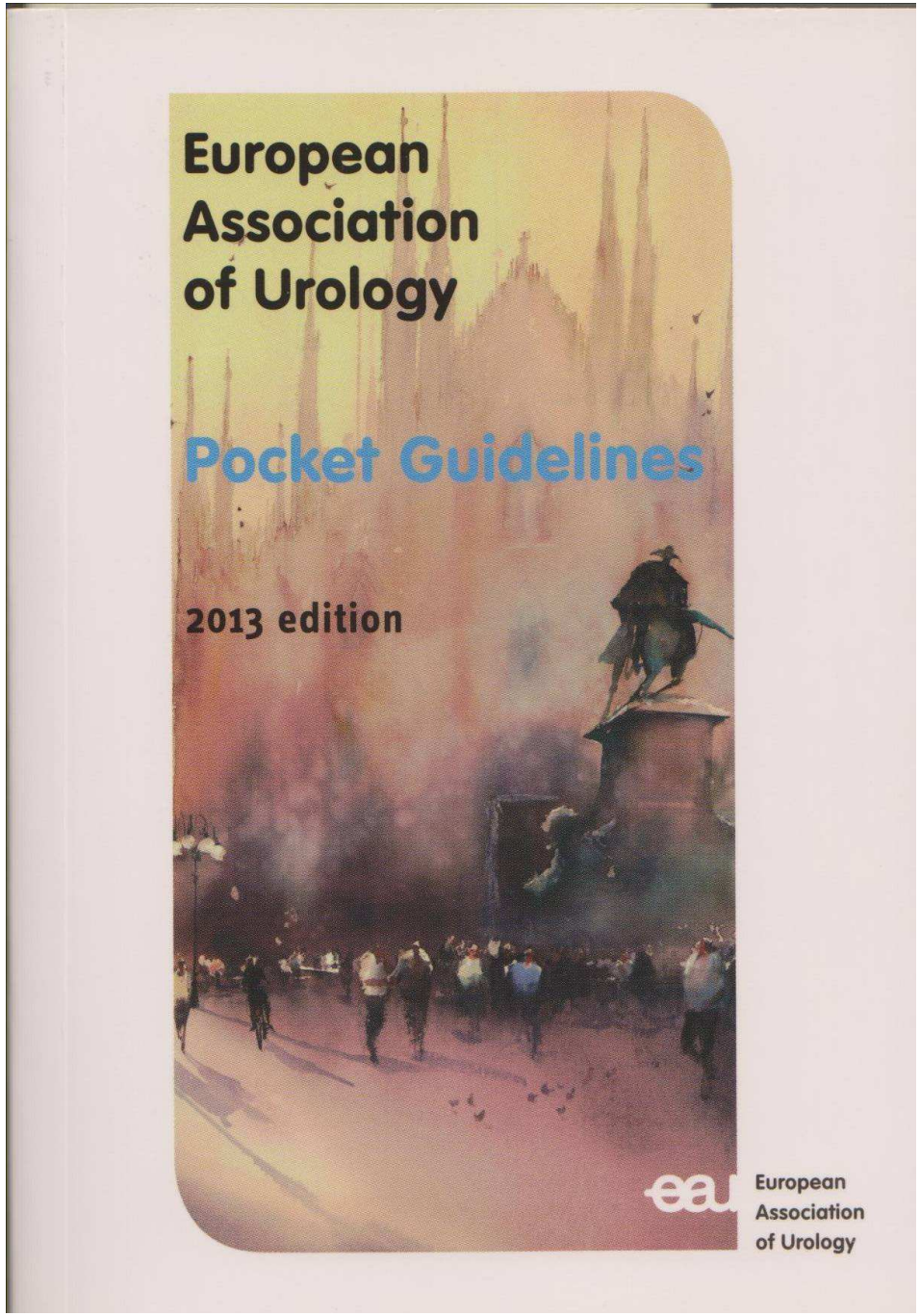
-**OBESITA’ SEVERA**

-**DEFORMITA’ SCHELETRICHE**

-**CHIRURGIA CONCOMITANTE**

-**NECESSITA’ DI RICORRERE A OROCEDURA UNICA**






**GRAZIE PER**
**L'ATTENZIONE**