



## 臺北醫學大學 泌尿腎臟研究中心 會議記錄

時間：**112年8月18日(星期五) 14:00-15:00**

地點：視訊會議-(請以正式全名登入會議室，以利進行會議簽到)

使用 Google Meet (會議前 10 分鐘即開啟會議室)

會議室連結：<https://meet.google.com/pop-tckf-ppx>

(敬略稱位)

會議主席：洪冠予

與會人員：

【附醫】劉明哲、葉劭德、吳建志、林孝友、吳政誠、張景欣、陳偉傑、羅詩修、  
戴定恩、方德昭、陳錫賢、林彥仲、吳岳霖、高治圻、陳靜怡、葉曙慶、  
邵明珠、周安琪

【萬芳】溫玉清、李良明、林克勳、林雍偉、蕭志豪、許軒豪、賴宗豪、鍾卓興、  
鄭仲益、陳作孝、蘇裕謀、劉崇德、楊韻紅、李明哲、鍾卓興

【雙和】吳佳璋、陳冠州、劉家宏、江怡德、鄒凱亦、高偉棠、胡書維、魏汶玲、  
吳美儀、洪麗玉、鄭彩梅、邱怡仁、陳佑瑋、廖家德、游博翰、陳正憲、  
邱惠雯

【新國民】許永和、鄒居霖

長官指導：

吳麥斯校長、許志成教授、崔克宏副院長、陳瑞明所長

議程：

一、慢性腎病團隊、泌尿創新技術與手術團隊 小組報告

吳 Wu 佳璋 Charles

TMU 洪冠宇

鄒凱亦

林盈青 事務員

鄭彩梅 專任主治醫師

陳瑞明

Mai-Szu Wu

許永和

劉明哲

sueym

胡書維 主治醫師

洪麗玉 專任主治醫師

葉劭德

廖家德 醫師

彥仲

內科部 腎臟內科 高治圻

崔克宏 副院長

94426 腎臟科 鄭仲益

張景欣

李家欣

Chulin Chou

崔克宏 副院長

劉家宏 專任主治醫師

3200 吳政誠

泌尿科 吳建志

95207 溫玉清 泌尿科

nann htway

林盈青 事務員

下午 2:51 | 8/18 下午 2-3 點 RCUK 例會



**Explore the influence of malnutrition-inflammation biomarkers  
on hip fracture among dialysis patients:  
A study from association to prediction medicine**

Dr. Cai-Mei Zheng

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## TMU-RCUK, CKD Division

- 1.萬芳: 鄭仲益 (組長) 、蘇裕謀
- 2.北醫: 林彥仲、葉曙慶、陳靜怡、邵月珠
- 3.雙和: 鄭彩梅、廖家德、高芷華、宋立勤
- 4.新國民: 鄒居霖



萬芳

北醫

雙和

新國民

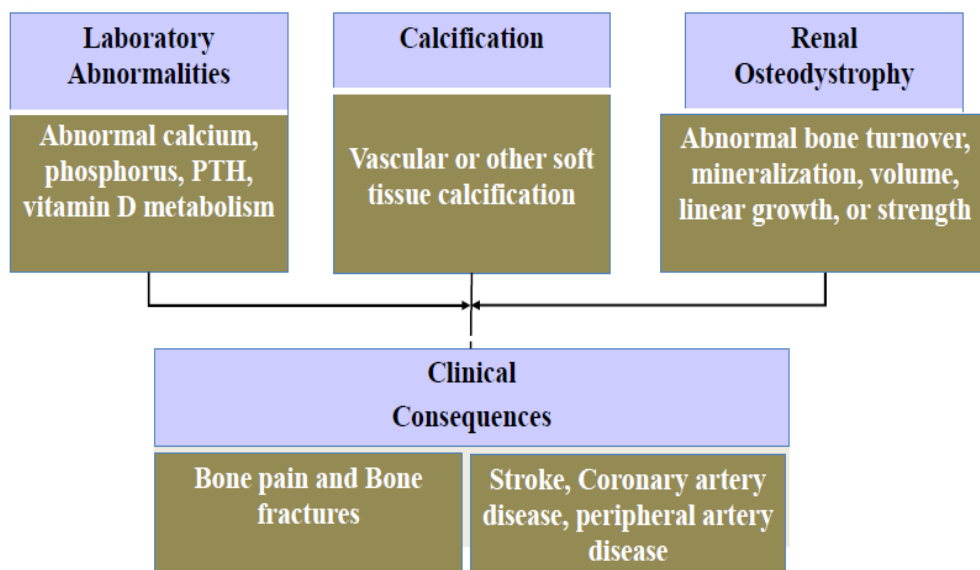
## TMU-RCUK CKD Division 合作

- 校級: 基礎: 臨床醫學研究所 邱惠雯教授  
臨床: 醫學資訊研究所 張資昊教授、  
醫學科技學院 黃芝瑋
- 院外: 基礎: 成功大學體育健康研究所  
黃滄海 教授兼所長  
臨床: 台灣大學腎臟科吳允升 教授
- 國際: 基礎: 日本自治醫科大學抗老化醫學中心  
黑尾誠教授兼所長

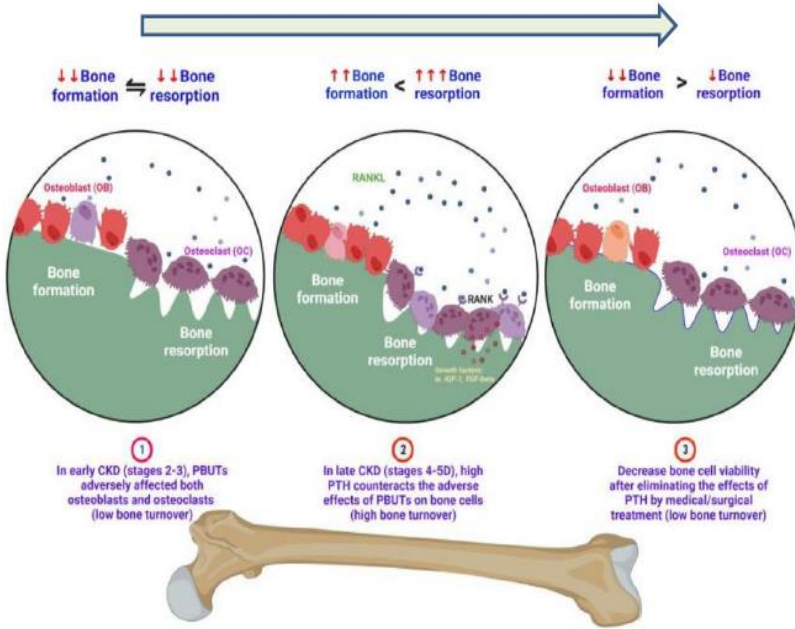
## TMU-RCUK, CKD-MBD Group

- **Background:** no available collaborative platform in TMU-CKD research teams
- **Current status:** Collaborative work on CKD-MBD using current available clinical data and basic research
- **Target:** Integrate clinical data & collaborative work on CKD related studies across TMU-affiliated hospitals, grant applications & publications

## Chronic Kidney Disease-Mineral and Bone Disorder

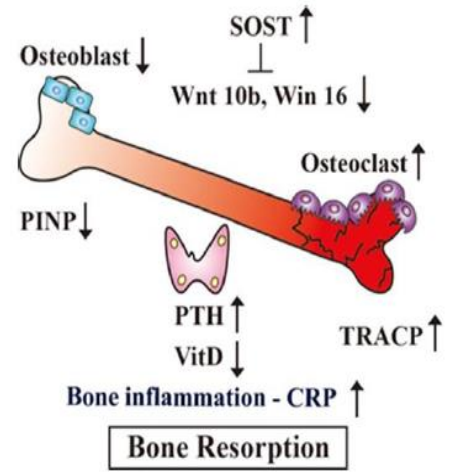


# PTH levels determine bone metabolism at different stages of CKD



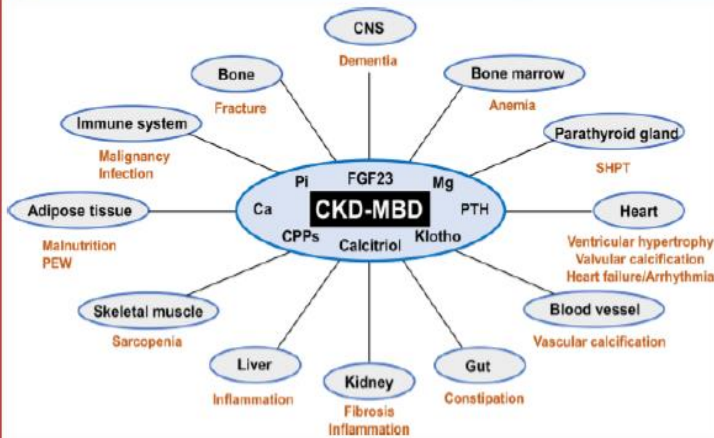
Zheng CM, et.al., Biomedicines 2023, 11, 2076

# Bone turnover markers vary with different PTH levels

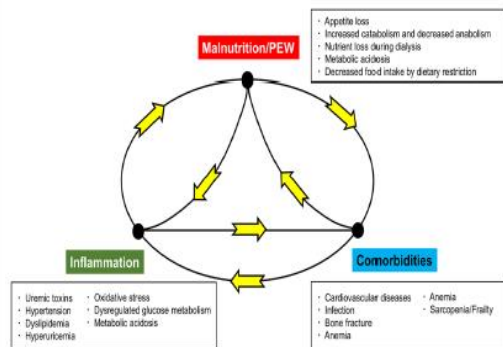


Zheng CM, et.al., Int J Mol Sci. 20200

# Emerging cross-talks between CKD-MBD and malnutrition-inflammation complex syndrome (MICS) in dialysis patients



Clin Exp Nephrol. 2022;26(7):613-29



# Hypoalbuminemia differently affects the serum bone turnover markers in hemodialysis patients accordingly with PTH levels

Zheng CM, et.al., Int J Med Sci. 2019;16(12):1583-1592

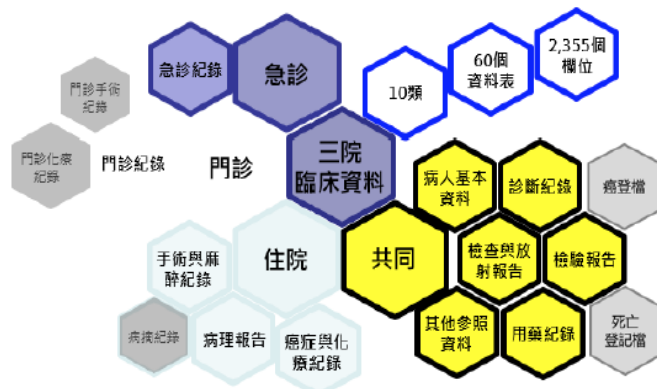
# Data collection



# Data structure and variables in TMUCRD

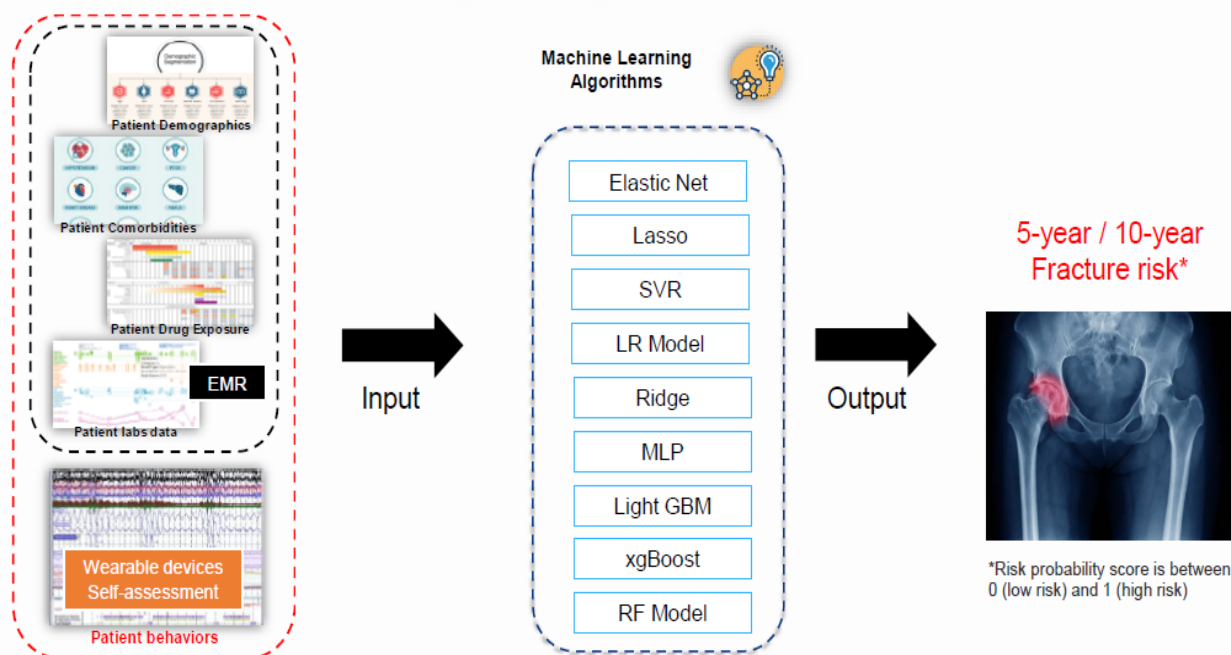


Data structure

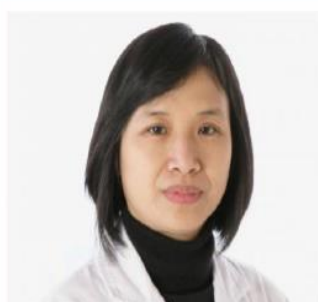


Data variables

# Prediction Model Development

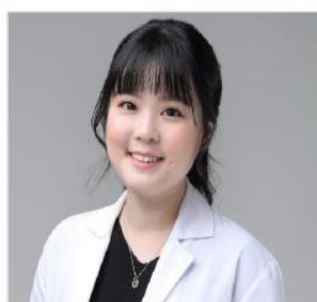


## Research team



雙和醫院 腎臟內科

鄭彩梅 副教授



北醫大 健康資訊科技國際研究中心

黃芝瑋 副研究員



北醫大 數據處

阮達英 助理研究員



衛生福利部雙和醫院  
(委託臺北醫學大學興建經營)  
Taipei Medical University - Shuang Ho Hospital,  
Ministry of Health and Welfare

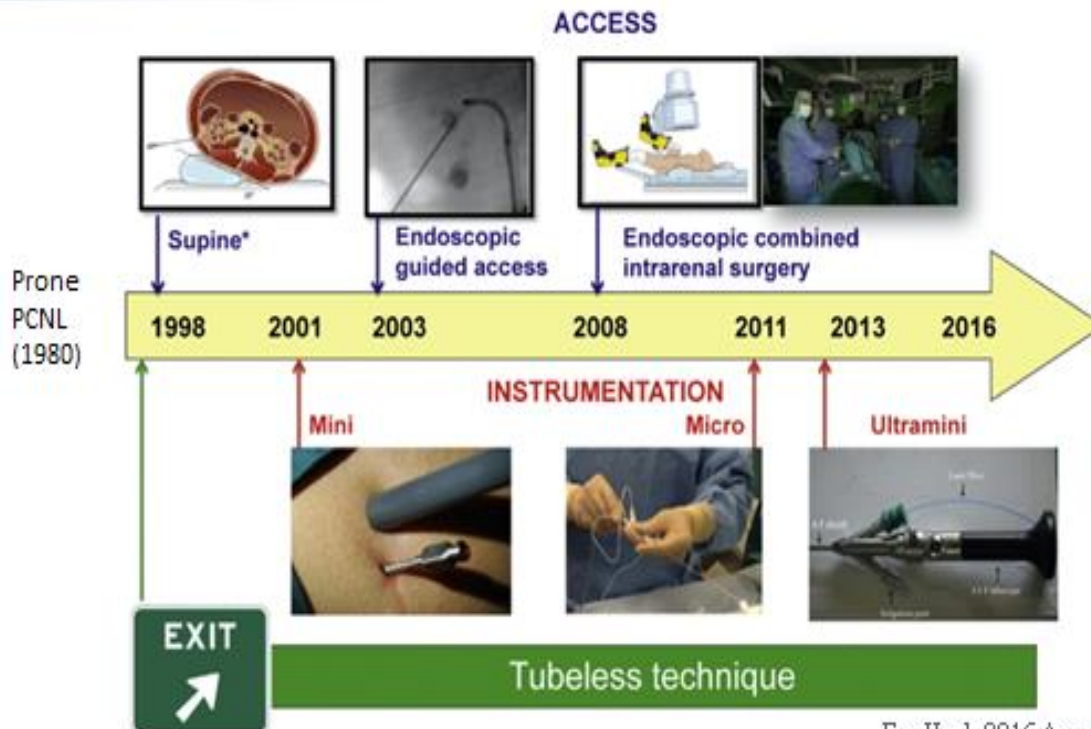


## Needle perc: a new instrument and clinical application

鄒凱亦醫師

Taipei Medical University Shuang-Ho Hospital

## Innovations in PCNL surgery







## Complicated renal stones



### Multiple tracts

Multi-Standard

Stand + mini tracts

Standard + needle perc



### Combined multiple endoscopy

ECIRS

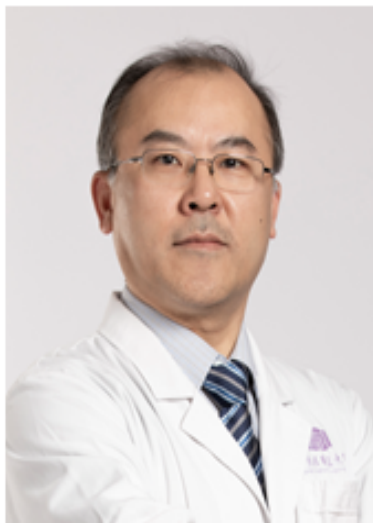
PCNL + antegrade fURSL

RIRS + needle perc

Needle-perc-assisted Endoscopic Surgery (NAES)

7

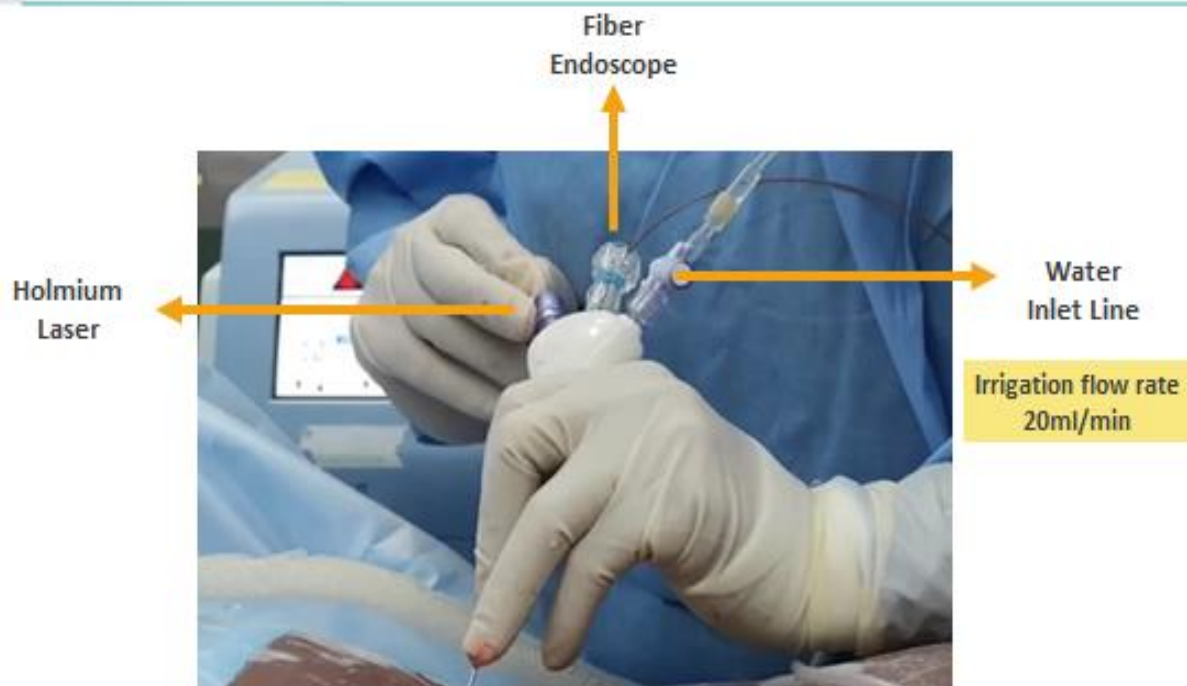
## 發明人 – 李建興



### 醫師介紹：

- 北京清華長庚醫院外科部部長，泌尿外科主任
- 現任中國醫師協會泌尿外科分會副會長兼總幹事
- 中國人體健康科技促進會泌尿系結石防治專委會主任委員
- 中華醫學會泌尿外科分會結石學組秘書長
- 中國泌尿系結石聯盟副主席
- 中國泌尿系結石聯盟兒童泌尿系結石診療協作中心主任委員
- 先後於BJUI、IJU、WJU、JE、Urology、CMJ等期刊發表多篇SCI文章，以及發表多篇中文核心期刊文章
- 獲得發明專利及實用新型專利10餘項

## Real world practice



## Easy to operate



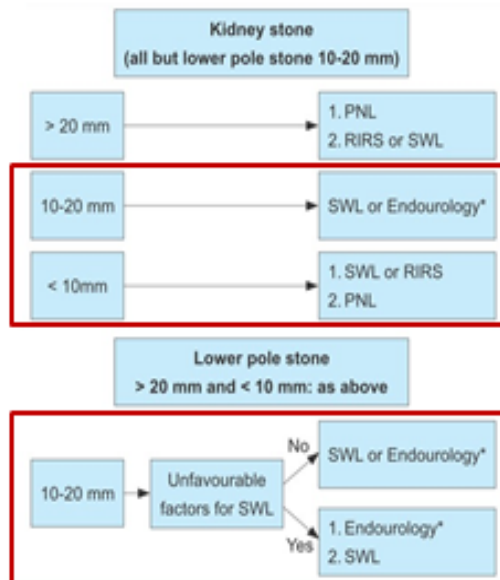
One hand use



a certain angle of inclination

The Needle-Perc components can withstand a static axial tensile force of 40N for 15 seconds without breaking or falling off

## The treatment choice of small renal stone



For small renal stone < 2cm  
EAU guideline suggest ESWL and RIRS

However

Above suggestion is poor treatment efficacy in the following situation:

1. Hard stone
2. Low pole stone
3. Sharp angle of IPA
4. Ureteral stricture

## For the renal stones that cannot be treated by RIRS and ESWL



For the hard stone (CT> 1000 HU) can not be broken by ESWL

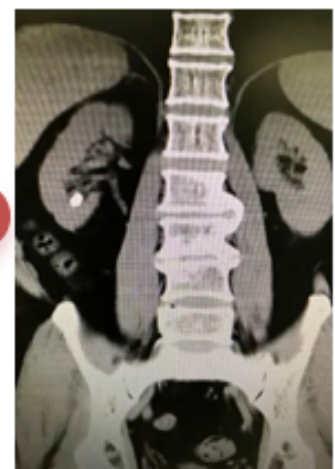
For the stone is located in the inferior calyx,  
The calyceal neck is very deep, narrow, and thin, and despite the flexible nature of the RIRS, it is sometimes difficult to reach



Hard to break, Hard to reach, Too risky for Standard PCNL



Needle-Perc can effectively clear these renal stones  
with minimal damage to the kidneys



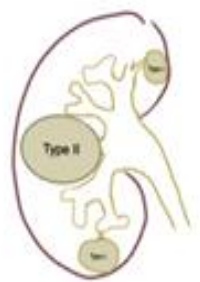
下盏结石  
Lower calyx stone



## Renal caliceal diverticular stone

- Calyceal diverticulum is a small semi-closed space into which urine can flow, but stone can not pass
- If there is mild or no obvious symptom, suggest follow up and observation
- If there is severe flank pain, infection, surgical intervention is indicated

| Characteristics                                 | Types       |                          |
|---|-------------|--------------------------|
|   | I           | II                       |
| Site of communication with Pelvicalyceal system | Minor calyx | Renal Pelvis/Major Calyx |
| Location of lesion                              | Polar       | Midzone                  |
| Symptoms  | Rare        | Common                   |



## PCNL should be considered the first line treatment



● SFR : 70-100%

● Symptomatically : 77-100%

● PCNL : 77-100%

● PCNL : 77-100%

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### PCNL could be the first line treatment, but there are some difficulties

1. Few fluid accumulation within diverticulum, difficult to puncture into
2. Even the success of the puncture cannot be judged by whether the puncture needle comes out of water
3. Small capacity of diverticulum and narrow of opening => difficult to place guidewire long enough

easy fulguration of the diverticular lining, and dilation of the diverticular neck if visible and desired. Ultrasound or CT guidance can

A

B

C

## Key points of kidney puncture

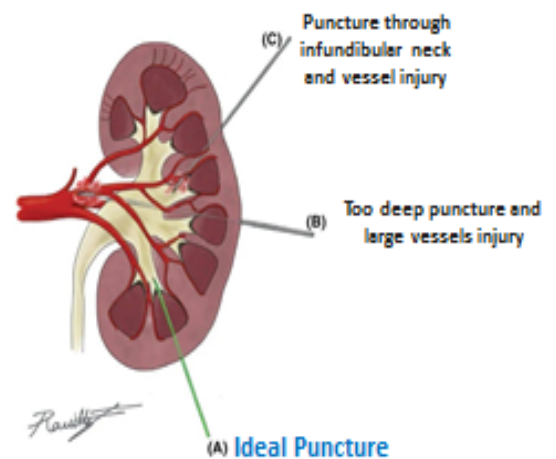


**Successful renal puncture** is the key to PCNL surgery

### ● Key points of renal puncture :

1. Calyceal fornix puncture
2. Angle and direction
3. Depth
4. Dilation

Calyceal fornix puncture to collecting system is the safest, less invasive, less bleeding



The recommendation to puncture directly onto the calyceal fornix, in line with the infundibulum

*Current Opinion in Urology* 29(4):p 472-473, July 2019

## Difficulties in renal puncture when no hydronephrosis

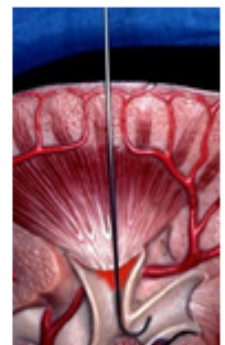


For the most complete staghorn stone without hydronephrosis,

Puncture needle can not puncture through hard stone, even no enough space to place guidewire => Easy to loss tract during dilatation



In this situation, more traumatic injury happens



## Complicated renal stones

### The necessary and shortcoming of Multiple tract PCNL

For complicated renal stone: Staghorn stone, multiple, narrow infundibulum, abnormal structure

- The stone free rate of **Single tract** PCNL is limited

AUA guideline: Multiple tract PCNL for staghorn stone

More tracts or larger tracts mean:  
More injury, more hemorrhage, more scar



**But how to minimize damage to the kidneys?**



多管径穿刺

### Needle-perc decrease the injury of Multiple tract-PCNL



For complicated renal stone (Staghorn stone), multiple tract PCNL is necessary

Although we can not decrease number of tract,  
We can decrease **size** of tracts



The size of Needle-perc is only 4.2fr  
Effectively reduce the number of large channels and  
reduce kidney damage



Scar of standard PCNL



Wound of Needle-perc



## Diverse applications of Needle-perc for complicated renal stone



NP + SD



NP + MINI



NP + SD+ MINI



ECIRS : NP + RIRS

Needle perc is very flexible in the application of multiple combinations of complex stones

Personalized renal stone surgery



## Echo-guided renal puncture





## Take home message

- Needle perc alone is suitable for small size, low pole calyceal stones, esp., pediatric patient
- For complicated renal stone or large volume renal stones, combination of needle perc and mini-PCNL(16-18 Fr.) or fURSL (needle ECIRS) could achieve higher stone free rate