TMU-Research Center of Urology and Kidney

Monthly Meeting

Times：**2025/2/13(Thursday) 9:00-10:00**

Google meet link： https://meet.google.com/jtv-taqu-qwg

Meeting Chairperson：Kuan-Yu Hung

Participant：

【TMUH】Ming-Che Liu、Yao-Chou Tsai、Shauh-Der Yeh、Chien-Chih Wu、Hsiao-Yu Lin、Jeng-Cheng Wu、Ching-Hsin Chang、Wei-Chieh Chen、Fang-Yu Ku、Shih-Hsiu Lo、Te-Chao Fang、Hsi-Hsien Chen、Yen-Chung Lin、Chih-Chin Kao、Ching-Yi Chen、Shu-Ching Yeh、TING-EN TAI

【WFH】Yu-Ching Wen、Liang-Ming Lee、Ke-Hsun Lin、Yung-Wei Lin、Chi-Hao Hsiao、Syuan-Hao Syu、Chung-Howe Lai、Yung-Ho Hsu、Chih-Chen Hsu、Tso-Hsiao Chen、Cho-Hsing Chung 、Chung-Yi Cheng、Chung-Te Liu、Yun-Hong Yang、Ming-Che Lee、Yueh-Lin Wu、I-Wen Wu

【SHH】Mai-Szu Wu、Chia-Chang Wu、Chia-Hung Liu、Yi-Te Chiang、Kai-Yi Tzou、Wei-Tang Kao、Su-Wei Hu、Wen-Ling Wu、Mei-Yi Wu、Lie-Yee Hung、Cai-Mei Zheng、Yu-Wei Chen、Chia-Te Liao、Cheng-Hsien Chen、Hui-Wen Chiu、Po-Han Yu、Tze-Wah Kao、Kuan-Hung Lin

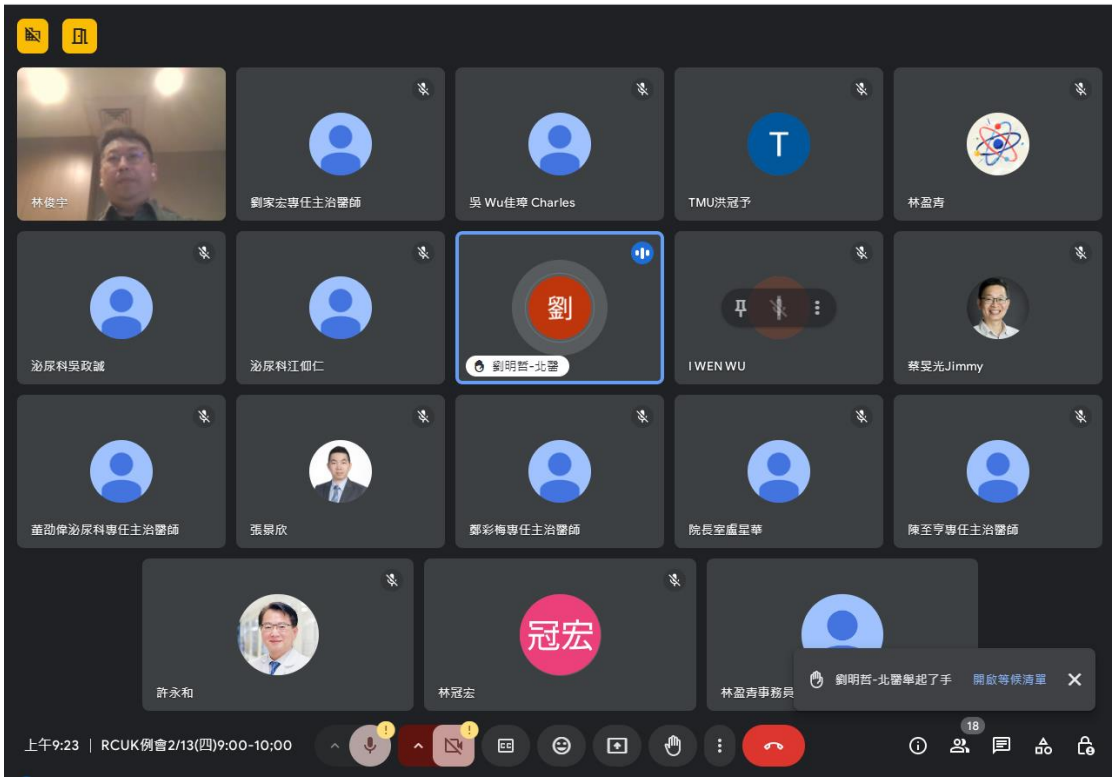
【SKMH】Yuh-Mou Sue、Chu-Lin Chou

Chief：Mai-Szu Wu (President, TMU)、Chih-Cheng Hsu (Professor, NHRI)、Ke-Hung Tsui (Vice President, SHH) 、Shing-Hwa Lu

Agenda： 1.Progress report on the renal and urinary precision health plan and biological sample database

2. School-level research center indicator tracking

3.Evaluation of right adrenal veinanatomy by Dyna computed tomography in patients with primary aldosteronism



臺北醫學大學
TAIPEI MEDICAL UNIVERSITY

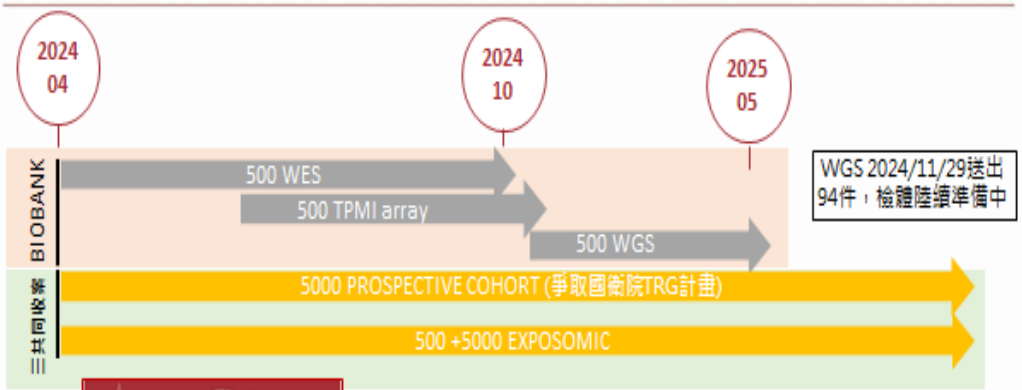
臺北醫學大學
泌尿腎臟研究中心

腎臟泌尿精準健康計畫及生物檢體資料庫進度報告

報告人：吳逸文 副教授

114年2月13日

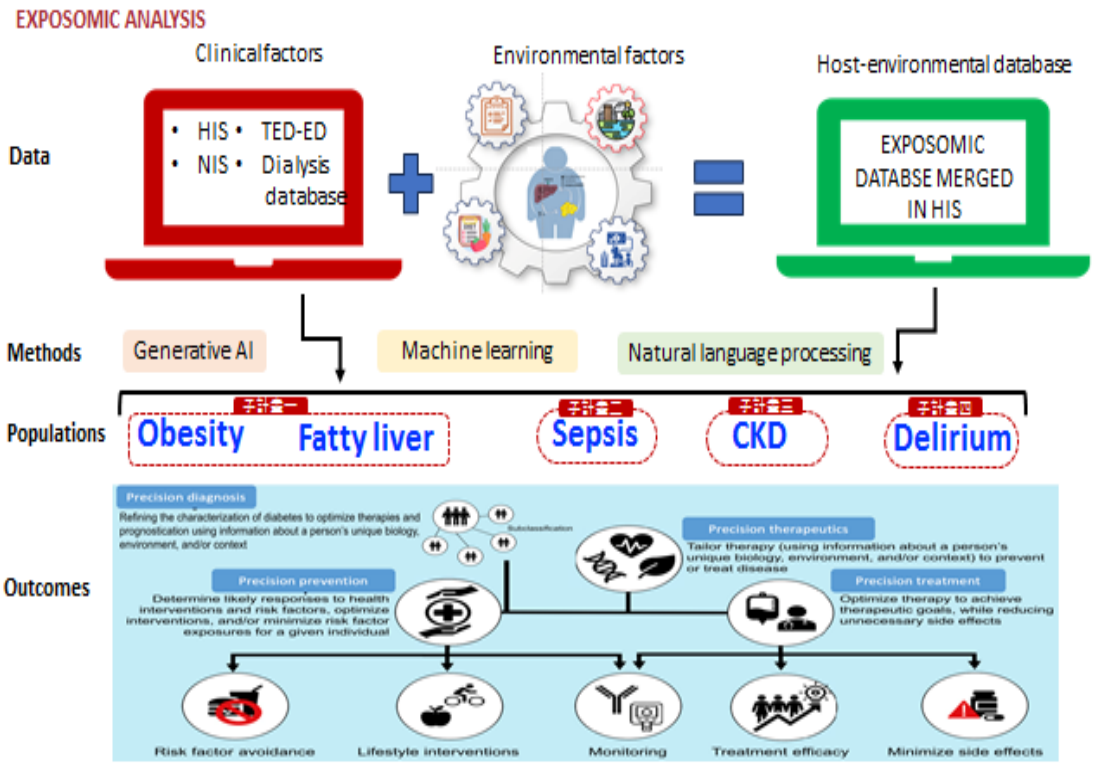
精準腎臟健康計畫進度：



https://docs.google.com/forms/d/e/1FAIpQLSeWgJ3cN3ue8jDkuUtRfqtUY7-G5mW43UIGBjxj49kIc9cD5w/viewform?usp=pp_url&entry.1813552769=T20241105-01

Biobank 收案時，公衛學生同時收集問卷

附醫	雙和	萬芳
高治圻	林冠宏	吳岳霖
吳逸文	廖家德	



One campus: 共同收案，共享資料，共同發表

- **Prospective Genomic Cohort Establishment:**

高治圻/吳逸文

IgA nephropathy

廖家德/林冠宏

Polycystic kidney disease

Diabetic kidney disease

吳岳霖

Other kidney disease

年度	月份	腎臟科_簡和_血液	腎臟科_附醫_血液	腎臟科_萬芳_血液
2024	7	0	1	0
2024	8	0	2	0
2024	9	0	7	0
2024	10	0	13	0
2024	11	0	11	0
2024	12	0	18	0
2025	1	0	12	0

目前成果及未來工作

目前成果：

- 教育部深耕計畫：腎病精準醫學計畫（吳逸文, 2024/1-2024/12）
- 國際研討會：台灣腎臟醫學會-台馬泰國際研討會（吳逸文, 2024/12/14)

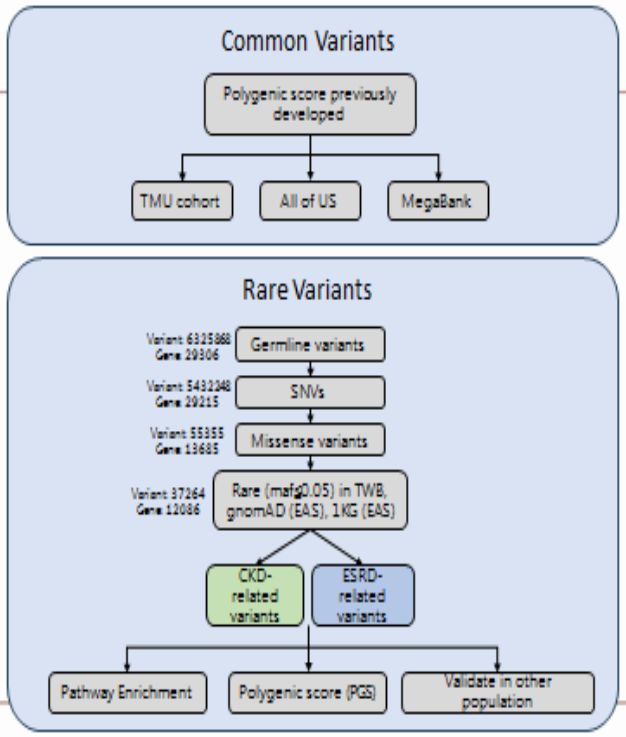
未來工作：

國科會計畫：2 件（吳逸文，洪冠宇，已投出）

教育部深耕計畫：1 件（吳逸文，已投出）

國衛院計畫：1 件（吳麥斯，預計2025/03 投出）

Figure 1. Study Workflow



113學年度研究績效指標

績效指標	113學年度目標值	Q1 (8-10)			Q2 (11-1)			Q3 (2-4)			Q4 (5-7)		
		自訂值	目標值	達成率	自訂值	目標值	達成率	自訂值	目標值	達成率	自訂值	目標值	達成率
產科會計畫件數	20	18		90%	-	-	-						
大型/尋獎計畫件數	1	0			0								
發表論文數(SCIE、SSCI、EI等)	90	22	22	100%	22	22	100%						
生技論文IF≥8 篇數	15	3	3	100%	2	4	50%						
學術共識營	1	1	1	100%	-	-	-						
募款-研究中心發展基金	100萬				100萬		100%						

113學年度臨床轉譯績效指標

績效指標	目標值	Q1 (8-10)			Q2 (11-1)			Q3 (2-4)			Q4 (5-7)			當責者
		自訂值	目標值	達成率	自訂值	目標值	達成率	自訂值	目標值	達成率	自訂值	目標值	達成率	
三院AKD收案量年增率10%(現況累計330例)	380	351 T:0 W:59 S:292	350	100.3%	374 T:0 W:66 S:308	360	103.9%		370			380		(T)吳逸文 (W)鄭仲益 (S)盧家德
三院攝護腺癌局部精準治療(海福刀)	60例	14 T:4 W:0 S:10	15	93.3%	12 T:2 W:0 S:10	15	80%		15			15		(T)劉明哲 (W)林維俊 (S)吳俊璋

SCIENTIFIC REPORTS

Evaluation of right adrenal vein anatomy by Dyna computed tomography in patients with primary aldosteronism

Bo-Ching Lee, Chin-Chen Chang, Kao-Lang Lin, Yeun-Chung Chang, Vin-Cent Wu & Kuo-How Huang

Department of Medical Imaging, National Taiwan University Hospita, etc

Published: 23 June 2016

Taiwan Adventist hospital

Chun Yu Lin

林俊宇 醫師

現職
- 台安醫院影像診斷科 主治醫師
- 三軍總醫院 放射診斷部 兼任主治醫師
- 天主教永和耕莘醫院 放射科 兼任主治醫師
- 台灣介入放射線學會 秘書長
- 台灣周邊血管學會 理事
- 台北市守護天使癌症關懷協會 理事
- 中華民國放射線學會 病人安全及醫療影像品質委員會-輻射安全次委員會 委員

學歷
- 臺北醫學大學醫學系
- 臺北醫學大學臨床醫學研究所

經歷
- 臺大醫院實習醫師
- 雙和醫院內科住院醫師
- 高雄榮民總醫院放射線部 住院醫師、總醫師
- 台北醫學大學附設醫院影像醫學部主治醫師
- 中華民國放射線學會 學術教育與次專科發展委員會-腹部影像診斷次專科委員會 委員
- 台灣介入放射線學會青年介入醫師教育課程 種子教師

重要獲獎
- 2022 The Rising Star at NTUH : 1st Prize
- APCIO 2019 6th Asia Pacific Congress on Interventional Oncology cTACE Challenge 3rd Prize
- RSROC 2018 Best Scientific Exhibition Award
- ACTA 2014 The 1st Asian Conference of Tumor ablation Best Scientific Exhibition Award
- ACAR 2013 The 4th Asian Congress of abdominal Radiology Best Scientific Exhibition Award

Introduction

- **Primary aldosteronism (PA)** is the most common cause of **secondary hypertension** and consists **up to 11%** of patients with hypertension.
- Common underlying etiologies include an aldosterone-producing adenoma, unilateral adrenal hyperplasia, and bilateral idiopathic adrenal hyperplasia.
- PA can be divided into unilateral and bilateral subtypes. **Surgery is indicated for patients with unilateral hyperaldosteronism**, which is able to alleviate or cure hypertension in most patients.
- It has been shown that computed tomography (CT) and magnetic resonance imaging (MRI) can be **misleading and unreliable** for distinguishing unilateral from bilateral PA.

Introduction

- Adrenal venous sampling (AVS) is the recommended procedure for diagnosis of PA, but the technique is difficult and the **right adrenal vein is especially hard to catheterize**.
- Recently, the presence of **Comebeam CT** and its ability to delineate the vascular structures have **increased the success rate of AVS**.
- A detailed description of the clinical relevant anatomy of the right adrenal vein incorporating Dyna CT images is lacking. **The aim of this study was to determine the location and anatomical variation of the right adrenal vein using Dyna CT during AVS.**

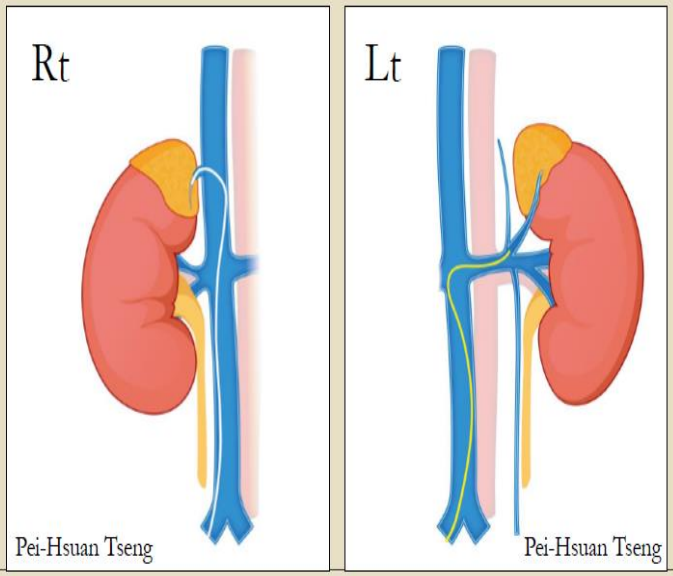
Materials and Methods

- **AVS protocol**
  - All AVS was **performed between 8:00 AM and 11:00 AM**
  - Maintain a **supine position** one hour before the AVS procedure
  - **No adrenocorticotropic hormone (ACTH) stimulation** was administered before or during AVS
  - The position of the catheter tip before sampling the right adrenal vein was checked via the injection of a small amount of diluted contrast medium (Omnipaque 350) and Dyna CT
  - Discarded the first 10 ml of blood during IVC sampling and the first 5 ml of blood during adrenal sampling

Materials and Methods

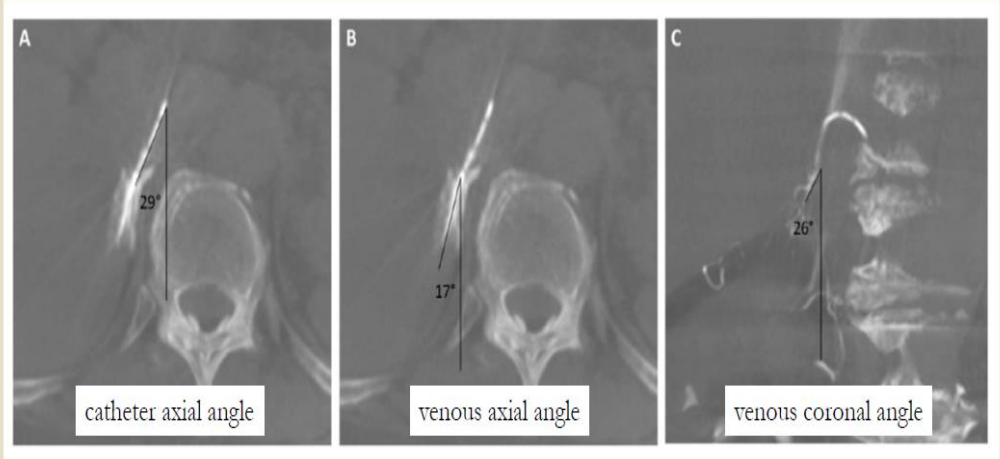
- **Dyna CT protocol.**
  - Diluted the contrast medium with normal saline in a **1:3 ratio** to avoid an excessive streak artifact
  - The actual Dyna CT was acquired 2 seconds after the start of the injection of contrast medium
  - The **contrast medium was injected for 8 seconds (rate of 0.5 to 1.0 ml/s)** and the total injected volume ranged from 4 to 8 ml
  - The rotation time for Dyna CT is 6 seconds, and the detector moves at 45° per second. The patients were told to **breath as gentle as possible** before the Dyna CT and to **hold their breath without inspiring or expiring**

Example for AVS (Cartoon diagram)



Materials and Methods

- **Dyna CT interpretation**

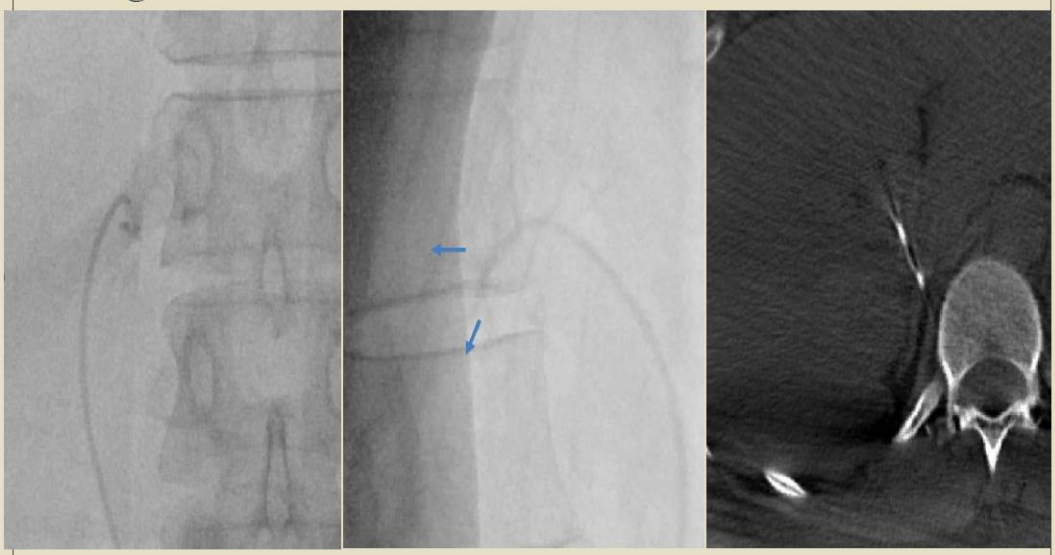


Materials and Methods

- Statistical analysis
  - The Spearman rank correlation coefficient
    - Evaluate the correlations between **the level of the right adrenal vein orifice, the venous axial angle, the venous coronal angle, and body mass index (BMI)**
  - Divided vertebral bodies into superior, middle, and inferior segments

Right adrenal catheterization

T12 inferior segment



AP view | Lateral view | Dyna CT

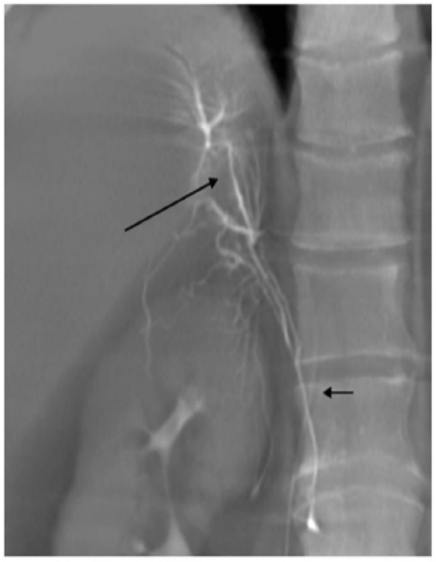
Results

- Accessory vessel of the right adrenal vein.

Right adrenal vein drainage into the accessory hepatic vein was found in 7/66 patients (10.6%)

Opacification of the right inferior phrenic vein occurred in 16 (24.2%)

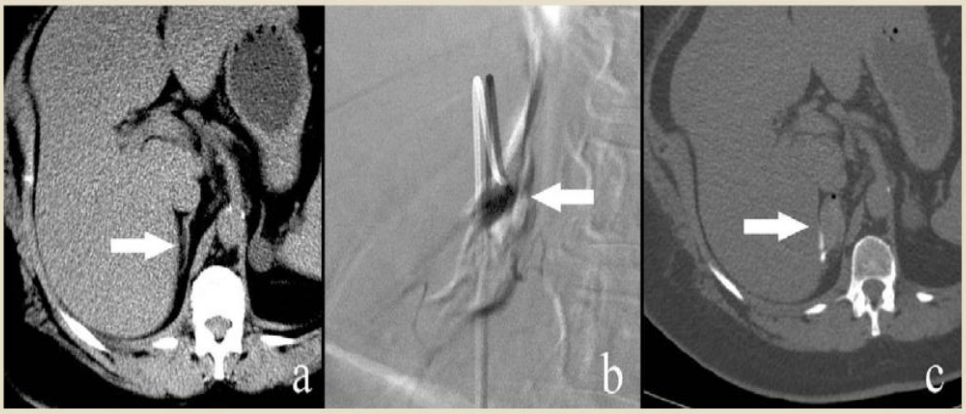
Communicating capsular veins of the right adrenal glands were opacified in 59 (89.4%)



Short communication European Journal of Radiology Volume 81, Issue 9, September 2012, Pages 2304-2307

Adrenal venous sampling using Dyna-CT—A practical guide

Christina Plank*, Florian Wolf, Herbert Langenberger, Christian Loewe, Maria Schoder, Johannes Lammer



Extravasation Hematoma

Discussion

- Limitations
  - Conebeam CT and the mechanical injection of contrast medium might introduce **unknown effect** to the AVS result, especially when the adrenal vein was injured after forceful injection during Dyna CT.
  - Vein variation
  - Streak artifact
  - Unilateral hyperaldosteronism had uneven distribution of lateralization, in which 27 of them to the right side and 5 to the left

Conclusion

- This study shows that Conebeam CT is able to provide detailed anatomical information to the course and direction of the right adrenal vein.