

Page Kidney by Bilateral Hematomas: A Systematic Review of the Page Kidney Phenomenon Following Trauma

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Disclosures

- I have no relevant financial relationships to disclose.

Background

- **Page kidney or the Page phenomenon** is a rare cause of hypertension caused by direct renal compression by perinephric collection such as hematoma or urinoma.
- The most common cause of Page kidney is trauma followed by
 - Iatrogenic (i.e., biopsies, or ureteral surgeries)
 - Spontaneous causes (i.e., tumor, AV malformations)
- Goal
 1. To present the **first case report of traumatic Page kidney resolution by bilateral Gerota's Fascia release.**
 2. Evaluate the current literature on the presentation and management of Page kidney

Question

- What is the typical presentation and management of patients with Page kidney in the trauma population?

Methods

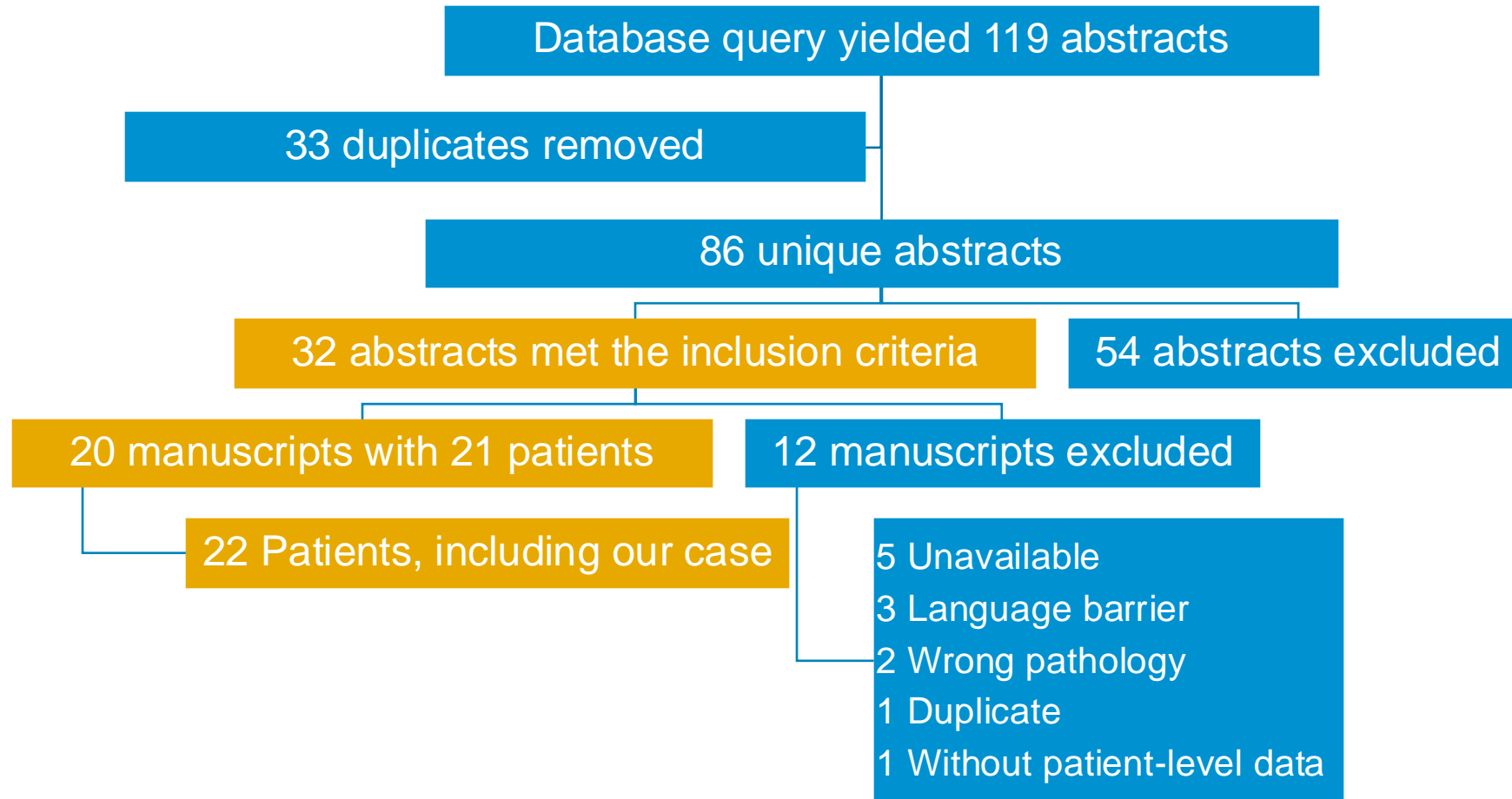
- Performed a systematic review with databases available to Geisinger: **PubMed, Medline, Embase, and JBI EBP** databases
- Search terms with “*page kidney*” OR “*page phenomenon*” AND “*trauma*.”
- Search results uploaded to Rayyan Systematic Review

Date			Title	Authors
1991-01-01	98%	Anthony Andrew	Page kidney: a curable form of arterial hypertension. Case report and review of the literat...	Aragona, F.; Artibani, W.; Ca...
1981-01-01		Anthony Andrew	A case of renovascular hypertension induced by perirenal trauma (Page kidney). [Japanes...	Arai, T.; Ohshima, E.; Hatan...
2021-01-01		Anthony Andrew	Turning the page on page kidney with dual raas blockade	Assante, W. J.; Griffiths, J.; ...
2010-02-01	98%	Anthony Andrew	The Page kidney phenomenon secondary to a traumatic fall	Babel, N.; Sakpal, S. V.; Cha...
2010-09-01		Anthony Andrew	Subcapsular renal hematoma after ureterorenoscopy: An unknown complication of a know...	Bansal, U.; Sawant, A.; Dha...
2022-09-15	98%	Anthony Andrew	Persistent retroperitoneal haematoma from undiagnosed renal cell carcinoma in a young t...	Barns, M. E.; Stewart, B.; C...

Methods

- Two independent residents reviewed abstracts for inclusion.
 - **Inclusion:** any evidence of a Page kidney from any traumatic injury.
 - **Exclusion:** any other etiology of kidney injury
 - Disagreements were discussed and resolved with collaborative discussion
- Manuscripts were reviewed and screened for eligibility
 - **Exclusion:** any primary etiology for kidney injury other than Page kidney or if the manuscript was unavailable in English
- Manuscript data was uploaded into an Excel file that included our case of Page kidney

Results



Brief Hospital Course

- 54 yo M L2 trauma alert after an unrestrained MVC going 35 mph.
 - **Injuries:** bilateral renal hematomas, R 9-12 rib fx, and L parietal scalp laceration.
- The patient was hypertensive at admission
- Decreasing **urine output**, increasing **Cr**, and **hypotension (worst eGFR = 4)** and requiring **hemodialysis** prompting an abdominal CTA revealing worsening perinephric hematomas on HD4.



Brief Hospital Course

- HD5: OR for ex-lap and evacuation of zone II hematomas with **bilateral Gerota's Fascia release** with abdominal packing.
- HD7: Return to OR, abdominal washout and delayed primary closure
- The patient did well postoperatively, still requiring hemodialysis
- Discharged on HD 12 with outpatient hemodialysis (eGFR = 7)
- 2 month follow up showed **resolving AKI** (eGFR = 35)

Results

- Number of patients = 22
- **Primarily occurred in young patients.**
 - Age of presentation median = 24, [min =9, max =89]
- Primarily males (21/22, 95.5%)
- **9-year range of onset** of Page Kidney from the initial trauma
 - Median onset of Page kidney from initial injury of 15 days
- Past Medical History: 6 (27%) with a history of renal failure with **4 patients with an allograft kidney.**
- **Mechanism:** 10 blunt, 6 MVCs, 5 falls

Results

- Not all patients presented with hypertension (3, 13.6%)
- **Hematomas** primarily caused Page kidney (95.5%) with 1 case of urinoma
- Most presented **unilaterally on the left kidney** (Left = 9, Right = 6, 4 = Allograft, 2 = Bilateral)
- **Most patients underwent surgical intervention**, including nephrectomies, hematoma evacuation, or decortication (N =13), IR drainage = 3, Medical blood pressure medications = 5
- **All patients survived** with a median follow up time of 0.38 years

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Thank You

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