



## Unilateral Dependent Pulmonary Oedema during Open Retroperitoneal Partial Nephrectomy: A case report and review of literature

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### Introduction

- Intra-operative unilateral pulmonary oedema of the dependent lung in the lateral decubitus position is rare
- Recognition of risk factors is essential for prompt management of this complication

### Patients & Methods

- We report a case of intraoperative right-sided pulmonary oedema during open left retroperitoneal partial nephrectomy (RPN)
- Review of literature on unilateral-dependent pulmonary oedema was performed.

### Results

- M/59 with 4.5cm left upper pole renal tumour (Figure 1, 2) scheduled for open left RPN
- PMH: psoriasis, HT, DM, renal impairment, congestive heart failure and AF on dabigatran.
- Positioning: right lateral decubitus position with kidney bridge.



Figure 1



Figure 2



Figure 3: intra-op CXR



Figure 4: CXR on POD3

- Intra-operative findings:
  - Desaturation to 70% despite 100% oxygen therapy was noted 2 hours after the start of operation
  - Auscultation, ultrasonography of chest showed reduced air entry and movement in dependent right lung with pleural effusion. CXR: right pulmonary edema (Figure 3)
- Full recovery after treatment with Lasix, chest drain insertion, head-up position & 2 days of ventilatory support

### Review of literature

| Literature     | Age  | Operation / duration                        | Risk factors                                      |
|----------------|------|---|---|
| Morrisroe 2007 | M/32 | Left laparoscopic donor nephrectomy 5 hrs   | 7700ml fluid given intra-op                       |
|                | M/44 | Left laparoscopic donor nephrectomy 5.5 hrs | 8000ml fluid given intra-op                       |
| Snoy 1984      | F/30 | Right pyelolithotomy                        | Massive transfusion (1.2L with 13U PC and 6U FFP) |
|                | M/18 | Left open donor nephrectomy                 | 6650ml fluid given intra-op                       |
| Baraka 1987    | M/50 | Open right radical nephrectomy 4.5 hrs      | 4L fluid and 4U PC, 4 units FFP                   |
| Manisha 2009   | M/40 | Left laparoscopic donor nephrectomy 5.5 hrs | Overhydration 8L fluid                            |
|                | M/55 | Left laparoscopic donor nephrectomy 6 hrs   | 8L fluid given intra-op                           |
|                | F/58 | Left laparoscopic donor nephrectomy 5 hrs   | 5.5L fluid given intra-op                         |

### Conclusion:

- Unilateral-dependent pulmonary oedema in lateral decubitus position is a rare but reversible complication when promptly managed
- Risk factors include overhydration/excessive transfusion >5L, prolonged operative time >5hours and possibly poorly controlled congestive heart failure.

### References

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