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Nephrectomies At Tobruk Medical Center

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إستئصال الكلية بمركز طبرق الطبي

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ABSTRACT

Background. Nephrectomy is used both to treat renal cell carcinoma (RCC) and to remove kidneys destroyed by benign disease. The balance between these indications reflects local epidemiology and access to care. Aim. To appraise the retrospective series of nephrectomies at Tobruk Medical Center reported by Ben Khayal and Ghareeb (2026) against recent international evidence. Findings. Of 45 tabulated patients, 71.1% were older than 45 years, 53.3% were male, 60.0% had left-sided surgery, and 46.7% (21/45) had malignant disease. Malignancy accounted for 23.1% of operations in patients younger than 45 years and 56.3% in older patients. The predominance of non-malignant indications contrasts with historical European series and may reflect stone- and infection-related kidney loss, as well as the centre's referral role. Conclusions. The series is a useful first descriptive baseline. Histology, procedure type, surgical approach, complications, and follow-up should be added before it can guide practice, and hereditary RCC assessment should be considered for young patients with malignancy.

الملخص :
خلفية. تُستخدم عملية استئصال الكلية لعلاج سرطان الخلايا الكلوية (***RCC***) وإزالة الكلى التي دمرتها الأمراض الحميدة، ويعكس التوازن بين هذه المؤشرات علم الأوبئة المحلي والوصول إلى الرعاية. هدف. لتقييم سلسلة عمليات استئصال الكلى بأثر رجعي في مركز طبرق الطبي التي أبلغ عنها بن خيال وغريب (2026) مقابل الأدلة الدولية الحديثة. النتائج. من بين 45 مريضًا تم جدولتهم، كان 71.1% أكبر من 45 عامًا، و53.3% من الذكور، و60.0% خضعوا لعملية جراحية في الجانب الأيسر، و46.7% (45/21) يعانون من مرض خبيث. وشكلت الأورام الخبيثة 23.1% من العمليات لدى المرضى الذين تقل أعمارهم عن 45 عامًا و56.3% لدى المرضى الأكبر سنًا. وتتناقض غلبة المؤشرات غير الخبيثة مع السلسلة الأوروبية التاريخية وقد تعكس فقدان الكلى المرتبط بالحصوات والعدوى إلى جانب دور الإحالة للمركز. الاستنتاجات. تعتبر السلسلة بمثابة خط أساس وصفي أولي مفيد. يجب إضافة علم الأنسجة ونوع الإجراء والنهج الجراحي والمضاعفات والمتابعة قبل أن يتمكن من توجيه الممارسة، ويجب النظر في تقييم سرطان الخلايا الكلوية الوراثي للمرضى الصغار المصابين بالأورام الخبيثة.

الكلمات المفتاحية: استئصال الكلية الجذري، استئصال الكلية الجزئي، استئصال الكلية البسيط، سرطان الخلايا الكلوية، ليبيا

1. INTRODUCTION

Nephrectomy is performed for two broadly different reasons: oncologic removal of renal and upper-tract tumours, and removal of an irreversibly damaged, non-functioning kidney. Which indication dominates in a given hospital depends on cancer incidence, the availability of cross-sectional imaging, and the local burden of stone and infectious disease. Globally, 434,840 new cases of renal cancer and 155,953 deaths were recorded in 2022, and demographic change alone is projected to raise these figures to 745,791 cases (+72%) and 304,861 deaths (+96%) by 2050, with five-year overall survival ranging from 40% to 75% by region (Larcher et al., 2025). Northern Africa has comparatively low age-standardised incidence (1.8 per 100,000 in women and 2.5 in men, against 8.5 and 16.9 in Northern America), and Africa contributed roughly 4% of worldwide cases (Larcher et al., 2025). Higher incidence in wealthier countries is thought to reflect, at least in part, more frequent abdominal imaging and detection of small renal masses, rather than a purely biological difference (Bukavina et al., 2022). Contemporary management of RCC follows the European Association of Urology (EAU) guideline, whose 2025 update introduced new recommendations on stereotactic body radiotherapy for localised disease, adjuvant therapy, and later-line systemic treatment, together with a dedicated chapter on hereditary RCC (Bex et al., 2025). Locally, Ismail et al. (2021) analysed 402 histologically confirmed cancers at Tobruk Medical Center between January 2013 and June 2020, of which kidney cancer accounted for nine cases (2.2%). Against this background, this review appraises the nephrectomy series by Ben Khayal and Ghareeb (2026).

2. METHOD

A retrospective cross-sectional descriptive study was conducted using data collected from the medical records of 46 patients who underwent nephrectomy at Tobruk Medical Center. All data were stored anonymously to protect the patients' identities.

3. ETHICS APPROVAL

Ethical and administrative approval for this study was obtained from the Medical Affairs of Tobruk Medical Center dated 12.10.2024. Due to the retrospective design of the study based on medical records review, the requirement for informed consent was waived by the administration

4. RESULT

More than two-thirds (32cases, 71%) of the nephrectomy patients were above 45 years. While13 cases (29%) were below 45 years. The median age of patients was 45 years.

More than half (24cases, 53.3%) of nephrectomy patients were male. While 21 cases (46.7%) were female.

18 cases (40%) of nephrectomy patients were right kidney. While 27 cases (60%) were left.

21 cases (46.7%) of nephrectomy patients were malignant. While24 cases (53.3%) were non-malignant.

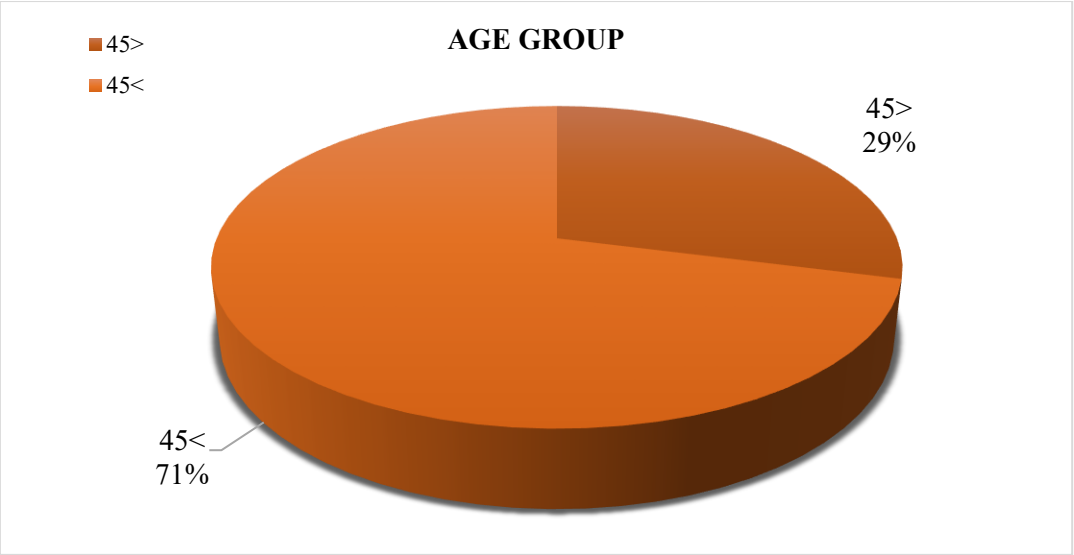


Figure 1. Age group of nephrectomy patients

Table (1): Age Groups of Nephrectomy Patients

Characteristics Age group	Frequency (cases)	Percentage
<45	13	28.9 %
>45	32	71.1 %
total	45	100 %

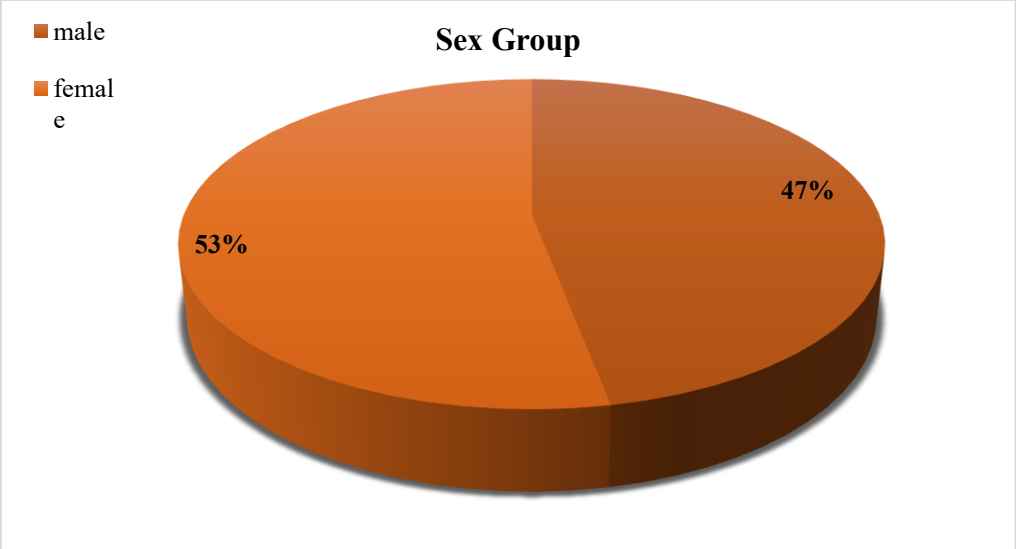


Figure (2): Sex Group of Nephrectomy Patients

Table (2): Sex Group of Nephrectomy Patients

Characteristics Sex Group	Frequency (Cases)	Percentage
Male	24	53.3 %
Female	21	46.7 %
Total	45	100 %

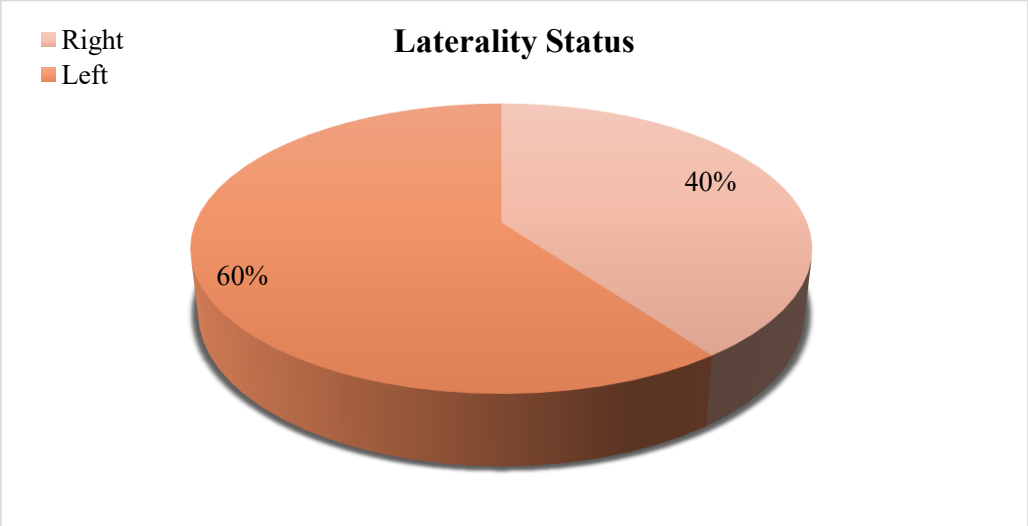


Figure (3): Laterality of Nephrectomy Patients

Table (3): Laterality of Nephrectomy Patients

Characteristics Laterality Status	Frequency (Cases)	Percentage
Right	18	40 %
Left	27	60 %
Total	45	100 %

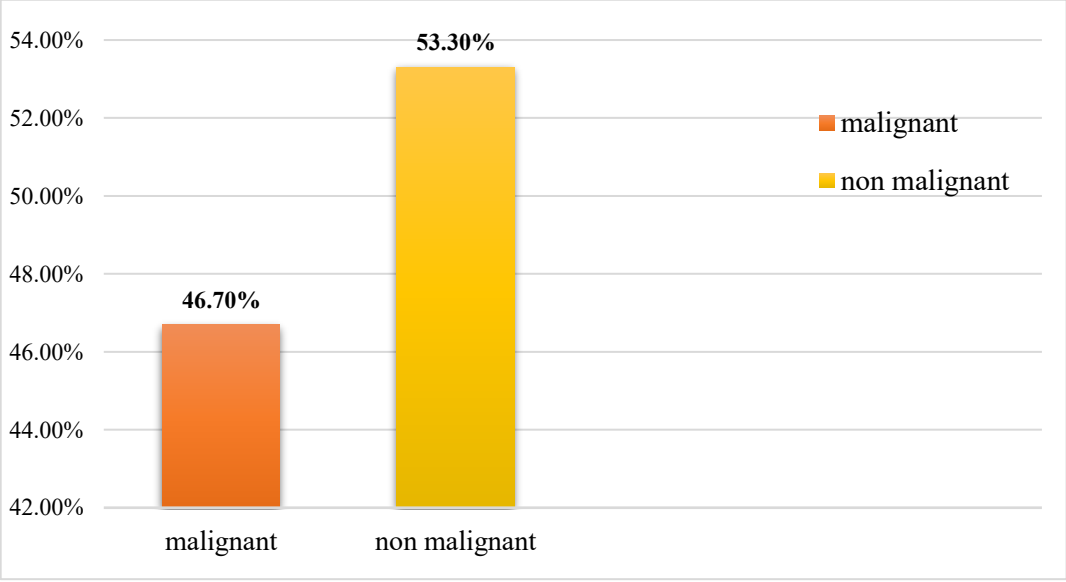


Figure (4): Malignant Cases of Nephrectomy Patients

Table (4): Malignant Cases of Nephrectomy Patients

Characteristics of Malignant Status	Frequency (Cases)	Percentage
Malignant	21	46.7%
Nonmalignant	24	53.3%
Total	45	100 %

5. DISCUSSION

Just over half of the operations (53.3%) were for non-malignant disease. This is the reverse of the classic Norwegian series of 646 consecutive nephrectomies (1978–1997), in which 437 operations (67.6%) were for malignancy, including 98 upper-tract urothelial tumours, and 209 (32.4%) for benign conditions. In that series, nephrectomy for benign disease declined from 75 cases in the first five-year period to 32 in the last (Beisland et al., 2000). A falling benign share over time suggests that earlier management of stone disease and infection prevents kidney loss; a benign-predominant series such as Tobruk's may therefore point to late presentation of obstructive or infective disease, although this inference needs confirmation with indication-level data.

The category "non-malignant" also needs to be unpacked. It combines kidneys destroyed by stones, chronic infection, or xanthogranulomatous pyelonephritis with benign tumours removed because they were suspected to be cancer. In partial nephrectomy for suspected renal tumours, a meta-analysis found that 19% of lesions were benign (95% CI 18%–21%), most often oncocytomas, angiomyolipomas, and cysts, and benign pathology was more frequent in women (Kim et al., 2020). For destroyed kidneys with xanthogranulomatous pyelonephritis, a single-centre comparison of 67 patients found laparoscopic simple nephrectomy feasible, with less postoperative pain and faster recovery than open surgery (Chiancone et al., 2023). Comparisons across series should be made cautiously, because the Norwegian cohort includes upper-tract tumours and all nephrectomy types, while the meta-analysis concerns partial nephrectomy only.

Age distribution and hereditary renal cell carcinoma

Malignancy was more common in older patients: 3 of 13 operations (23.1%) in patients younger than 45 years compared with 18 of 32 (56.3%) in older patients. An exploration two-sided Fisher's exact test by the reviewer gave $p = .055$, a borderline result that a series of this size cannot settle. The direction is consistent with the steady rise of kidney cancer incidence with age (Bukavina et al., 2022; Larcher et al., 2025).

The three malignant cases below 45 years deserve specific attention. Between 5% and 8% of RCC is hereditary, and genetic testing is indicated for early-onset disease (thresholds of 46 and 50 years have been used), multifocal or bilateral tumours, a family history of RCC, or suggestive histology (Larcher et al., 2025). Testing is generally recommended for sporadic RCC diagnosed 46 years (Bukavina et al., 2022), and the 2025 EAU guideline now includes a hereditary RCC chapter (Bex et al., 2025). The manuscript does not report histology, family history, or tumour multifocality for these patients, so their eligibility for evaluation cannot be judged.

Sex and laterality

The near-equal sex distribution (53.3% male, 46.7% female) differs from the roughly twofold male excess in RCC incidence reported worldwide, but that excess is less pronounced in African regions (Bukavina et al., 2022; Larcher et al., 2025). Because the series pools malignant and non-malignant indications, and benign pathology is more frequent in women (Kim et al., 2020), the pooled sex ratio is hard to interpret. A breakdown of sex by pathology is needed. The 60% left-sided predominance has no established oncologic significance and should be regarded as descriptive.

Regional context and referral pattern

Ismail et al. (2021) found only nine kidney cancers among 402 histologically confirmed cancers at Tobruk Medical Center during 2013–2020, whereas the present series records 21 malignant nephrectomies. The nephrectomy study period is not stated, so this difference cannot be reconciled from the manuscript. Possible explanations include a longer observation window, inclusion of upper-tract urothelial or other malignancies, and under-capture in pathology-based registries, which the authors themselves note may under-register urinary tract cancers diagnosed mainly by imaging (Ismail et al., 2021). Ismail et al. also report that the centre's histopathology department is the only one in the region and that some biopsies are referred elsewhere.

The case mix of a referral hospital reflects capacity and referral pathways and should not be read as population incidence. In particular, the 46.7% malignant fraction is a proportion of operations, not an incidence rate.

Surgical approach and perioperative outcomes

The manuscript lists typical intraoperative complications but does not report the type of nephrectomy (radical, partial, or simple), the approach (open, laparoscopic, or robotic), or any complication or outcome data. This is the most important gap for clinical use. The Norwegian benchmark series reported complications in 15.5% of patients, significantly more often after nephrectomy for malignancy than for benign disease, with 3.0% reoperation and a 30-day mortality of 3.1% (Beisland et al., 2000). Although historical and based on conventional surgery, it remains a reasonable reference point for an internal audit at Tobruk.

Limitations of the Series

The study is single-centre, retrospective, and small, which limits precision and generalisability. The period of observation is not stated, and the sample size is inconsistent between text (46) and tables (45). Indication, histological subtype, stage, procedure, approach, complications, renal function, and survival are not reported. Established modifiable risk factors for RCC, namely obesity, diabetes, hypertension, chronic kidney disease, and smoking (Larcher et al., 2025), were not recorded. The analysis is purely descriptive, with no comparison between groups.

6. CONCLUSION

The Tobruk series offers a first descriptive picture of nephrectomy in a Libyan referral hospital: older patients, near-equal sex distribution, left-sided predominance, and a slight majority of non-malignant indications, with malignancy concentrated in patients older than 45 years. These features differ from historical European series and are compatible with a different balance of stone, infection, and cancer care. The most valuable next step is richer, prospectively collected data on histology, surgical technique, and outcomes, so that local practice can be compared with international standards.

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