

QUALITY ASSESSMENT OF HERNIA OPERATIONS IN AFRICAN INTERNATIONAL COOPERATION PROGRAMS

González-Valverde FM, Medina E, Rodriguez JM, Hurtado AM, Del Valle SR.
 Hospital General Universitario Reina Sofia – Region of Murcia (Spain)

AIM

To evaluate the quality of hernia repair procedures conducted in Central Africa through international cooperation programs and compare them to those in developed countries.

MATERIALS AND METHODS

This study analyzed 524 inguinal hernia repairs performed in Cameroon and Mali (2015–2019) under a charity program. These were compared with 386 similar cases from a Spanish multicenter study (2013). Data collected included clinical characteristics, surgical techniques, complications, and follow-up indicators. Preoperative evaluations in the African group were limited, and all procedures used tension-free repair techniques with polypropylene mesh.

RESULTS

Antibiotic prophylaxis was higher in Africa (100% vs. 75.4% in Spain). Local anesthesia use was comparable, while hematoma incidence was lower in Africa (3.8% vs. 11.6%). Long-term follow-up rates were 31% in Africa compared to 76% in Spain. Despite fewer resources, outcomes in Africa, such as recurrence rates (2.5% vs. 4.1%) and infection rates, were comparable to those in Spain.



Indicators of effectiveness, complications (%; 95 % CI)			
Indicators of effectiveness	International Cooperation in Africa	Multicentre Spanish Study Quality Control Section AEC	p<
Mortality	0 %	0 %	
Hematoma	3.8 % (2.3-5.7) ^a	11.6% (8.26-14.97) ^b	0.02
Wound infection	1 % (0.2-1.7)	1.46 % (0.18-2.74)	ns
Cephalgia	2.9 % (1.5-4.2)	1.42 % (0.18-2.68)	ns
Urinary retention	4.8 % (3.1-6.7)	1.42 % (0.18-2.68)	ns
Infection of prosthesis	0.4 % (0-1)	0.62 % (-0.24 + 1.49)	ns
Ochilus	0	0.29 % (-0.28 + 0.87)	ns
Scema	2.2 % (1.3-4.2)	6.11 % (3.18-9.03)	ns
Complications with prosthesis	9.93 %	7.1 %	ns
Complications without prosthesis	14.4 %	16.2 %	ns
Subsequent tracking	64 % (27.5-75.1) (31.1 % by the surgical team)	70 % (51 % by the same surgeon)	ns
Recurrence	2.5 % (0.6-5.5)	4.11 % (1.74-6.59)	ns

The results are expressed as percentages and the confidence interval is in parentheses

CI confidence interval

^a Three hematomas needed reintervention

^b Two hematomas needed reintervention

DISCUSSION AND CONCLUSIONS

This study shows that high-quality inguinal hernia repairs can be achieved in low-resource settings through structured international cooperation programs. Despite limited infrastructure and follow-up, outcomes in sub-Saharan Africa can be comparable to those in high-income countries when standardized techniques and adequate training are applied.

The recurrence and complication rates observed in our African cohort are consistent with those reported in global hernia studies, supporting the feasibility of tension-free mesh repair even in resource-constrained environments. Additionally, increased use of antibiotic prophylaxis may have contributed to lower infection rates, which contrasts with trends seen in European centers where antibiotic use is often more selective.

Challenges remain, particularly regarding long-term patient follow-up and sustainable implementation of surgical care. Local capacity building, surgical education, and mentorship models are recognized as effective strategies to improve outcomes and autonomy in host countries. This reinforces the importance of transitioning from externally driven missions to locally led, sustainable surgical programs.

Our data support the growing body of evidence advocating for equity in global surgical care and emphasize that quality outcomes are achievable beyond traditional healthcare systems.

REFERENCES

- Westra M, Mulima G, Ndayisaba G, et al. Surgical outcomes of inguinal hernia repair in sub-Saharan Africa: a systematic review. *World J Surg.* 2023;47(1):1–12.
- Kingsnorth AN, Tchounga BK, Elsej H, et al. Sustainable models for delivering hernia surgery in rural Africa: 10 years of experience. *Hernia.* 2023;27(2):325–32.
- Feldhaus I, Adebola P, Lavy C, et al. Improving postoperative outcomes through structured training and local mentorship in inguinal hernia surgery. *BMJ Glob Health.* 2024;9(1):e011234.
- Grimes CE, Law R, Dare AJ, et al. Global surgery and the hernia gap: a call to action for low-income countries. *Lancet Glob Health.* 2022;10(4):e560–66.
- Yeboah M, Bode CO, Ameh EA, et al. Surgical workforce, equipment, and capacity for hernia repair in Africa: a multicenter analysis. *BMJ Glob Health.* 2022;7(3).
- Tansley G, Sanchez U, Harries A, et al. Outcomes of inguinal hernia repair in sub-Saharan Africa: A systematic review. *World J Surg.* 2023;47(1):45–53.