



## Case Report

# Healthcare not ‘Healthcure’: A Case Study Depicting an Innovative Approach for Excision of Facial BCC and Skin Graft to Improve a Patient's Quality of Life in a Low-Resource Hospital Setting

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### ABSTRACT

**Introduction:** In low and middle income countries (LMIC), specialized surgical care is largely dependent on access, available resources, and surgeon expertise. In rural and low-resource settings, professionals with specialty training in plastic surgery, or knowledge of advanced reconstruction options such as Mohs micrographic surgery, are more limited. As a result, procedures to treat various cancers such as basal cell carcinoma (BCC) require alternative strategies. This case showcases a creative treatment of fungating BCC in a rural, low-resource hospital in the province of George in the Western Cape region of South Africa.

**Case:** A 94-year-old female presented with fungating BCC of the left buccal region. The lesion had been present for several years, however the patient had minimal access to healthcare. The appearance of the lesion was significantly impacting her quality of life. Additionally, flies and maggots were present, raising concerns for wound hygiene. The surgical team planned blunt and sharp excision of the BCC, with specific consideration for sharp excision off the zygomatic bone. Margins were not prioritized. Following excision, the team performed a left supraclavicular full thickness skin graft to the resection bed. The procedure was performed on May 6, 2025.

**Conclusion:** Rural hospitals in LMIC experience unique challenges with the administration of specialty surgical care. As a result, typical plastic surgery cases require innovation and creativity. In George, South Africa, a 94-year-old woman presented with BCC of the cheek; excision and skin graft of the resection bed was performed with great initial results. Challenges remain in ensuring long-term positive postoperative results with the patient's return to her rural residence. This case highlights the importance of addressing rural healthcare system challenges in LMIC, and encourages healthcare teams to remain adaptable and diligent in providing the best care to their patients with the resources available.

## 1. Introduction

In low and middle income countries (LMIC), the implementation of specialized surgical care is largely dependent on access, available resources and surgeon expertise [1-3]. In rural and low-resource settings, professionals with specialty training in plastic surgery, or knowledge of advanced reconstruction options such as Mohs micrographic surgery, are more limited [4]. As a result, procedures to treat various cancers such as basal cell carcinoma (BCC) require alternative strategies and

prioritization of oncological clearance, functional outcomes, and aesthetic reconstruction using the most feasible methods given available resources. These options include skin grafting, local and regional flaps, and free flap reconstruction. This case showcases an example of a resourceful and creative treatment of fungating BCC on the left buccal region of a 94 year-old female in a rural, low-resource hospital in the province of George in the Western Cape region of South Africa.

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## 2. Case

A 94-year-old female presented with fungating BCC of the left cheek. The lesion had been present for several years, however the patient had minimal access to healthcare as she resides in a small village. The appearance of the lesion frightened the patient's great-grandchildren with whom she enjoyed spending time, and was therefore significantly impacting her quality of life. Additionally of concern was wound hygiene given the presence of flies and maggots that were attracted to the lesion. Biopsy report from the referring provider confirmed BCC. The lesion, which had a necrotic center, was positioned below the eye and abutted the zygomatic bone. This placement resulted in compression of the eye, however there was no other eye involvement. The surgical team planned blunt and sharp excision of the BCC, with specific consideration for sharp excision off the zygomatic bone. Margins were not prioritized as the objective of this excision was primarily to address hygiene and quality of life concerns. Following the excision, the team planned to perform a left supraclavicular full thickness skin graft (formally known as a Wolff graft) to the resection bed. The expected outcome of the treatment plan was improved patient quality of life and hygiene. The procedure was performed on May 6, 2025, and paracetamol was used for post-operative analgesia. Unfortunately, the patient was lost to follow-up, so the team was unable to determine the long-term impacts of the procedure, or whether the desired outcomes were achieved.

## 3. Discussion

While South Africa is classified by the World Bank as an upper-middle income country, many of its rural regions emulate healthcare disparities reflective of lower income settings [5]. These disparities are more apparent across several healthcare specialties - plastic surgery notably being one of them. Education, costs, and accessibility impact the ability to offer plastic surgery services across rural areas. As a result, cases such as the one showcased here require innovation, creativity, and alternative mechanisms for addressing what would technically be deemed a plastic surgery case.

Given the lack of available trained specialists in plastic surgery, the team was limited in the specialized procedures they could perform. The team chose a skin graft to ensure the best possible outcomes and to address the concerns expressed by the patient. Ongoing concerns that remain in this specific patient's case will be ensuring proper postoperative wound care, especially as hygiene was an initial concern on presentation. Proper monitoring and follow-up will be required to ensure that the patient is keeping the graft site clean and that the wound site is healing properly.

There are multiple levels of challenges that this case brings to light. First, systemically, there is a discrepancy in healthcare between urban and rural areas in LMIC. This is evident in the availability of education, resources, and materials within specialty care such as plastic surgery at this specific institution. Second, there are unique patient population concerns that persist in rural areas postoperatively with wound care. This is apparent in the initial concerns that brought this patient into the hospital, and with ensuring proper postoperative care. Moving forward, action must be initiated at all levels to ensure sustainable improvement

in the longitudinal growth of healthcare systems in rural areas, and overall population health. In the meantime, surgical teams need to remain flexible and adaptable in order to provide the best care for their patients, as this team successfully demonstrated.

## 4. Conclusion

Rural hospitals in LMIC experience unique challenges with the administration of specialty surgical care. A 94-year-old woman presented with BCC of the cheek that required removal due to quality-of-life concerns. Given the available resources and limited specialty training present at the hospital, the healthcare team chose to perform an excision and skin graft of the resection bed, with great initial results. Challenges remain in ensuring long-term positive postoperative results with the patient's return to her rural residence. This case highlights the importance of addressing rural healthcare system challenges in LMIC, and encourages healthcare teams to remain adaptable and diligent in providing the best care to their patients with the resources available.

### Ethics Approval and Consent to Participate

Not Applicable.

### Consent for Publication

Not Applicable.

### Availability of Data and Materials

The datasets used/and or analyzed during the current study are publicly available, and additional analyses may be released by the corresponding author on reasonable request.

### Conflicts of Interest

None.

### Funding

None.

### Author Contributions

Lauren Cox: Conceptualization, investigation, visualization, writing – original draft. Leah Evans MD: Conceptualization, data curation, formal analysis, investigation, methodology, visualization, writing – review & editing. Hugo Stark MD: Conceptualization, data curation, methodology, writing – review & editing. Mike M Mallah MD: Conceptualization, supervision, writing – review & editing.

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