

Staggered Free Surgical Outreach Approach: A Viable Option of Outreach During Covid-19 Pandemic

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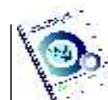
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Article Metrics

Date submitted: 07/04/2021

Date Accepted: 06/05/2021

Date Published: 30/07/2021



ABSTRACT

Background: One of the regular programs organized by Islamic Medical Association of Nigeria (IMAN) is a medical outreach in which patients are treated free of charge. This laudable program has been hampered by Covid-19 pandemic. We devised a staggered outreach protocol to cater for a limited number of medical and surgical patients, screened, investigated and treated under Covid-19 prevention compliant measures over two weeks. The objective of this study is to assess the surgical procedures done during the IMAN staggered surgical outreach and to report the outcome of such procedures.

Method: This is a retrospective study of 2-week staggered surgical outreach conducted by IMAN at IMAN Hospital, Sokoto. Names of potential beneficiaries were collected and screened at various locations. Limited number patients were investigated and operated at different days to avoid overcrowding and Covid-19 transmission. Data was collected via a proforma and analyzed using IBM SPSS 25 version. The results were presented in percentage, mean± standard deviation, tables and charts.

Results: Twenty-seven patients had surgical interventions during the staggered surgical outreach with mean age of 41.5 ± 22.0 years and a range of 4 to 90 years. The male to female ratio was 26:1. The cases managed were hernia (33.3%) ± benign prostatic hyperplasia, lipoma (18.5%), hydrocoele (14.8%), testicular tumour (7.4%), subacute appendicitis (3.7%) and ganglion cyst (3.7%). The surgical interventions offered were herniorrhaphy (33.3%), excisional biopsy (22.2%), herniotomy (14.8%), hydrocelectomy (7.4%), orchidectomy (7.4%), prostate biopsy (7.4%) and appendicectomy (3.7%). One patient developed hematocele post herniorrhaphy which was drained.

Conclusion: Staggered surgical outreach is a viable option for free surgical outreach. Hernia, hydrocoele, lipoma, testicular tumour and appendicitis can be operated with good outcome.

Keywords: Staggered outreach, Surgery, Covid-19 pandemic

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website: <http://www.jmbsr.com.ng>

doi: <https://doi.org/10.46912/jmbsr.58>

How to cite this article:

Muhammad AS, Khalid A, Kamba HU, Isyaku A, Abdullahi M, Abdullahi I. Staggered Free Surgical Outreach Approach: A Viable Option of Outreach During Covid-19 Pandemic. J Med Bas Sci Res 2021;2(1):65-70.

INTRODUCTION

Surgical outreaches to needy and under-served populations are being conducted by many organizations such as Nigerian Medical Association (NMA), Islamic Medical Association of Nigeria (IMAN) and International Humanitarian Organizations^[1]. This has been hampered by the Covid-19 pandemic which led to deterioration of many of the patients that could have benefited from these services. Since the onset of the pandemic, there has been an increase in the number of recorded unexplained deaths due to scaling down of services for medical and surgical conditions in almost all hospitals^[2]. At the initial phase of the pandemic, health workers were thrown into confusion due to fear of contracting the disease in the course of their duty. With time, this perception changed due to many training sessions and seminars organized on the management of Covid-19. Also, the health workers learnt how to conduct themselves even where the chance of contracting the pandemic was high^[1]. It was observed that health workers that observe preventive measures such as wearing of face masks, hand washing with sanitizers, physical distancing did not contract Covid-19 even when they had contact with the virus. Most of the current recommendations suggest suspension of elective cases^[3,4,5]. Some elective cases such as hernia have a tendency of becoming incarcerated and obstructed in the long run. This is the commonest surgical condition operated during surgical outreaches^[6,7].

No study has been done to assess the modality of carrying out outreaches in our environment during Covid19 pandemic. We devised a staggered outreach where a limited number of patients will be screened and operated at different times. This study is done to assess the surgical procedures and their outcome during staggered outreach by IMAN.

MATERIALS AND METHODS

This is a retrospective study of a 2-week staggered surgical outreach carried out by IMAN UDUTH/UDUS at IMAN Hospital, Sokoto from 17th - 31st October, 2020. The cases advertised were minor and intermediate surgical conditions that may be done as day cases or may require short admission. These included hernia, hydrocoele, lipoma, ganglion cyst and varicocele. The data collected included biodata, diagnosis, results of investigations, types of procedure, anaesthesia, admission and outcome.

The inclusion criteria were minor or intermediate surgical conditions that will last not more than one hour and can be done under local anaesthesia, spinal anaesthesia or ketamine. Patients excluded included patients with poorly controlled hypertension or diabetes, anaemia, respiratory tract infections, and patients reactive to serological markers for human immunodeficiency virus and hepatitis. Data was analyzed using International Business Cooperation Machines (IBM) Statistical Software for Social Sciences (SPSS) version 25.0. The results were presented in percentage, mean \pm SD, tables and charts. The study was approved by the Research Ethical Committee of IMAN Hospital.

Poor patients are those patients that are not gainfully employed or earn less than 50 USD (N 25 000) per month. Under care are children under the care of their parents who also are poor. Those in captivity are inmates under custody of Nigerian Correctional Service (NCS)

Staggered Free Surgical Outreach Protocol by IMAN

Staggered surgical outreach approach refers to a situation where the process of recruitment of patients, screening, investigations and treatment of patients are done for a limited number of people at

different times and on different days in order to avoid overcrowding and Covid-19 transmission.

Advertisements of selected cases were sent through the IMAN WhatsApp platform, IMAN gatherings and allied associations. Submission of patients' names and phone contacts was done at IMAN secretariat and IMAN Hospital. The patients were evaluated and screened in batches on different days, based on the cases of interest and guided by inclusion and exclusion criteria. A list of suitable patients was generated a week before commencement of the outreach. Advertisement for volunteers was done which included surgeons, nurses, anaesthetists, laboratory staff, pharmacists and cleaners. Logistics were taken care of by the executives of the IMAN who were also responsible for the assessment and provision of all the things required for surgery and feeding of the participants. Two surgeons operated at a time and up to 5 cases were operated per day. Different people were assigned to different days and times to avoid overcrowding.

The surgical outreach team was divided into 4 groups: logistics, screening, pre-operative, and postoperative surgical teams. The postoperative team was responsible for postoperative management which included administration of intravenous fluids, analgesia, antibiotics and monitoring. Patients were seen on the 1st and 7th post operative days for assessment of early complications and overall outcome. The stitches were removed on the 7th post-operative day.

RESULTS

Twenty-seven patients had surgical interventions during the staggered surgical outreach with mean age of 41.5 ± 22.0 years and a range of 4 to 90 years. There were 26 males (96.3%) and 1 female (3.7%), with male to female ratio of 26:1. About 2/3 of the patients

(74.1%) were poor; unemployed (37.1%), under care (22.2%) or in captivity (14.8%). Other details of the patients' occupation are shown in table 1 below.

The commonest surgical condition operated was hernia in 8 patients (29.7%). The distribution of patients diagnosis is shown in figure 1 below

Table 1: Distribution of Patients Occupation

Occupation	Number of Patients (n=27)	Percentage (5)
Unemployed	10	37.1
Under care	6	22.2
Civil servant	4	14.8
Inmate	4	14.8
Tailor	1	3.7
Security personnel	1	3.7
Trading	1	3.7
Total	27	100.0

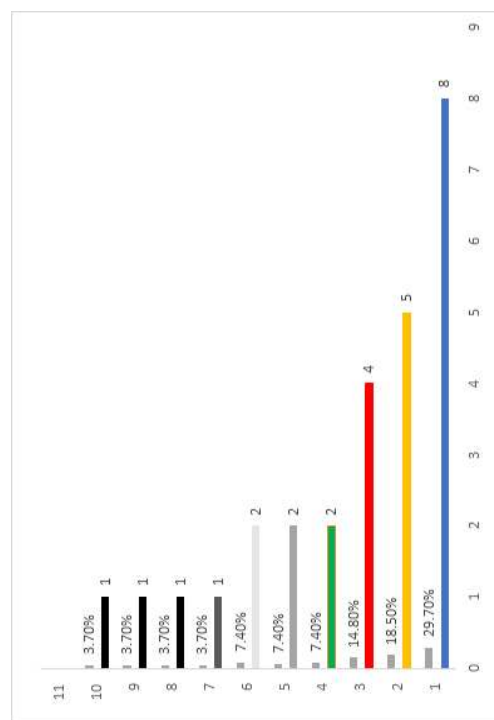


Figure 1: Distribution of Patients Diagnosis

Nineteen (19) patients (70.3%) required urgent intervention due to incarcerated or obstructed hernia (33.3%), suspicion of malignancy (22.2%),

infective process with suppuration (11.1%) and Appendicitis (3.7%) was the least most common disease. Twenty-nine surgical interventions were carried out in the patients. The commonest surgical intervention carried out was herniorrhaphy in 9 patients (31.1%). Other surgical interventions carried out are shown in figure 2 below.

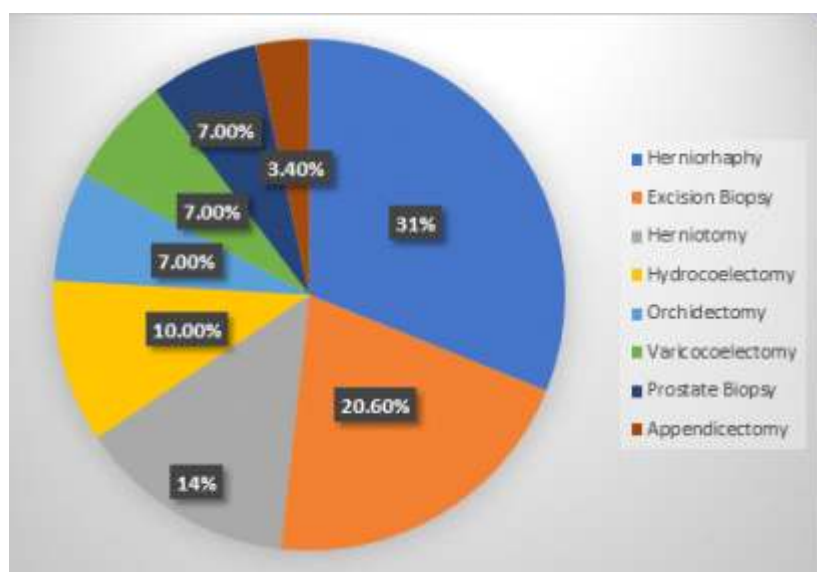


Figure 2: Distribution of Patients Surgical interventions

Local anaesthesia, xylocaine + adrenaline (0.5%) was used for 14 cases (48.3%), spinal anaesthesia in 8 cases (27.6%) and ketamine in 7 cases (24.1%).

Post-operative Management

Twenty-five patients were discharged on the same day the surgery was done, two patients with obstructed hernia were admitted for one day and one patients with appendicitis was admitted for three days. Patients were given maintenance intravenous normal saline, intramuscular diclofenac and broad-spectrum

antibiotics, initially 1g of ceftriaxone but on discharge drugs were converted to oral diclofenac with amoxicillin or ciprofloxacin. Patients were reviewed 1week after the procedure and stitches were removed from those patients with non-absorbable sutures. One patient developed a haematocoele post herniorrhaphy which was drained. The histology of the patients with a toe mass that was thought to be ganglion cyst confirmed giant cell carcinoma of the tendon sheath. Testicular masses revealed tumour calcinosis and

granulomatous orchitis. Prostate biopsy and excisional biopsy specimens for lipoma were benign.

DISCUSSION

Coronavirus infection is a respiratory disease caused by the Novel SARS-CoV-2 virus discovered in Wuhan province in China in December, 2019. WHO declared the disease a pandemic in March, 2020^[3]. It is spread by contact with infected people, surface or materials⁽⁴⁾. Overcrowding, enclosed space, anaesthesia that requires close contact with patient's air way may increase the spread. Hand washing, use of face masks, hand sanitizers, face shields and physical distancing are advocated as preventive measures^[3]. Early guidelines discouraged outpatients' services and elective services, only making exceptions for emergencies services^[1,4].

Free surgical outreaches are novel programs run by charitable organizations to cater for the health care services of the needy and less privileged people^[1]. This has been adversely affected by the Covid-19 pandemic. In Nigeria, increased deaths have been reported which were partly attributed to lack of care of the medical and surgical conditions which could have been avoided if there was a structure to cater for them^[2,5]. Majority of these individuals cannot pay for their health bills therefore depend on organizations like IMAN for intervention.

We devised the Staggered Free Surgical Outreach to see the feasibility of expanding it to cater for more cases including provision of specific medical services. This will serve as a pilot study for subsequent outreaches.

The mean age of the patients in this study is higher than the 35.2 years and 38 years reported by Ojo et al^[6] and Isichei et al^[7] in Jalingo and Jos respectively but the age ranges were comparable (4-90 years vs 1 month to 90 years)^[2]. Their study was done in a rural

community while our own was done in an urban area. Majority of our patients (81.5%) were not gainfully employed hence they were dependent on this kind of mission for the treatment of their conditions. The male female ratio is much higher than the 1.7:1 reported by the previous studies,^[6,7] this may be related to the fact that these other studies had higher number of patients and were open unlike our own that had restricted patient recruitment due to the Covid-19 pandemic.

The spectrum of cases in this outreach is comparable to the one reported by Ojo et al^[6] and Isichei et al^[7] in rural communities. They operated on hernia, hydrocoele, appendicectomy, orchidectomies, goiters and lump excision. No mortality was recorded in this study. However, Ojo *et al*^[6] recorded higher complication rate that include surgical site infection (5.1%), scrotal hematoma (0.7%), haemorrhage (0.3%) and wound dehiscence (0.3%). The rate of scrotal haematoma in this study was 3.4%. The scrotal hematoma was found in one patient in this study as opposed to 6 patients by Ojo et al^[6]. Although, they reported lower rate of complications due to much higher number of patients or procedures in their studies. In a study by Isichei et al^[7] the reported surgical site infection rate was 2.65% with no mortality.

The use of spinal, general and local anaesthesia was comparable what were reported by Ojo et al^[6] and Isichei^[7]. In the present study there was higher use of spinal but lower use general anaesthesia than what was reported by Ojo et al.^[6] They reported the use spinal, general and local anaesthesia in 7.6%, 34.3% and 58.2% respectively^[6], while in the present study, spinal, general and local anaesthesia were used in 27.6%, 24.1%, and 48.3% respectively.

Some of the cases treated in this study were incarcerated or obstructed hernia, suppurative cases or potentially malignant cases which if not done

could have led to mortality. Most recommendations encouraged suspension of elective cases^[4,8] but advocated repair of hernias and cases that have potential for complications in the long run. Staggered surgical outreach offers a promising and viable method of conducting outreaches during the Covid-19 pandemic. We advocate it for similar organizations. We hope to continue with this approach for both medical and surgical cases.

CONCLUSION

Staggered free surgical outreach is a feasible and viable option for outreaches in the period of the Covid-19 Pandemic. Minor and intermediate surgical cases that comprise hernia, hydrocoele, lipoma, testicular tumor and varicocoele can be operated with good outcome without increasing the risk of spreading the Covid-19 infection. This will help to cater for the underserved, needy and less privileged part of the society.

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