Out Sourcing of Head and Neck Oncologic Surgery: Cost Considerations

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ORIGINAL ARTICLE

Out Sourcing of Head and Neck Oncologic Surgery: Cost Considerations

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Abstract 165 surgeries for head and neck cancer have been performed by a team of the Indian Institute of Head and Neck Oncology IIHNO in 1 year. Integration of private players was necessitated because of need to share available facilities without losing objective of reducing the cost. These surgeries were performed at a private hospital using their resources for the operation theatre and post-operative intensive care services, since the IIHNO does not as yet have an operation theatre facility. The pre-op facilities and post-operative care was done at IIHNO a charitable cancer center under the Indore Cancer Foundation a public charitable trust. Cost analysis of these procedures has been done and the system of integration of the two have been analysed.

Keywords Cost cancer · Head and Neck · Indore cancer · Head and Neck Oncology

Introduction

A review of surgical procedure done over a 1-year period, from January 2019 to end of December 2019 by oncologists of the Indian Institute of Head and Neck Oncology has been done. The Institute, a flag ship project of Indore Cancer Foundation a Public charitable trust is a not for profit organisation. It has facilities for radiotherapy, chemotherapy, palliative care. As of now, the Institute does not have facilities of a surgical operation theatre. as such, surgical procedures are outsourced to a private hospital, medium-size nursing homes for limited time. Patients are shifted there for surgeries after pre-operative work up and investigations have been done at Indian Institute of Head and Neck Oncology, and here they undergo surgical procedure/s decided depending on the clinical findings, the stage and the plan of action After surgery, patients were kept in the post-operative ICU if required, looked after by our surgical team and when settled surgically, transferred to the Institute as soon as possible; generally after a couple of days where a team of Institute doctors and nurses looked after them. Indian Institute of Head and Neck Oncology is pre accredited under NABH and has received the Kaya Kalp award for cleanliness and infection free environment. Further care was then done at the institute, and after the arrival of the histopathology report adjuvant treatment in the post-operative setting was decided and wherever possible offered at the Institute itself. Institute is also recognised under Ayushman Bharat Yojana for radiotherapy. However patient's own choice in taking post-operative treatment was the final consideration.

In this study, we decided to evaluate the type and number of procedures done in last 1 year, the cost that was incurred in an outsourced settings, as described above.

Type of Surgical Procedures

165 procedures were done during the 1-year period. We have categorised these procedures into minor, major and supermajor surgery rather arbitrarily, based on our own operative time. This has been done keeping in mind that the focus of this study is cost impact. The intermediate

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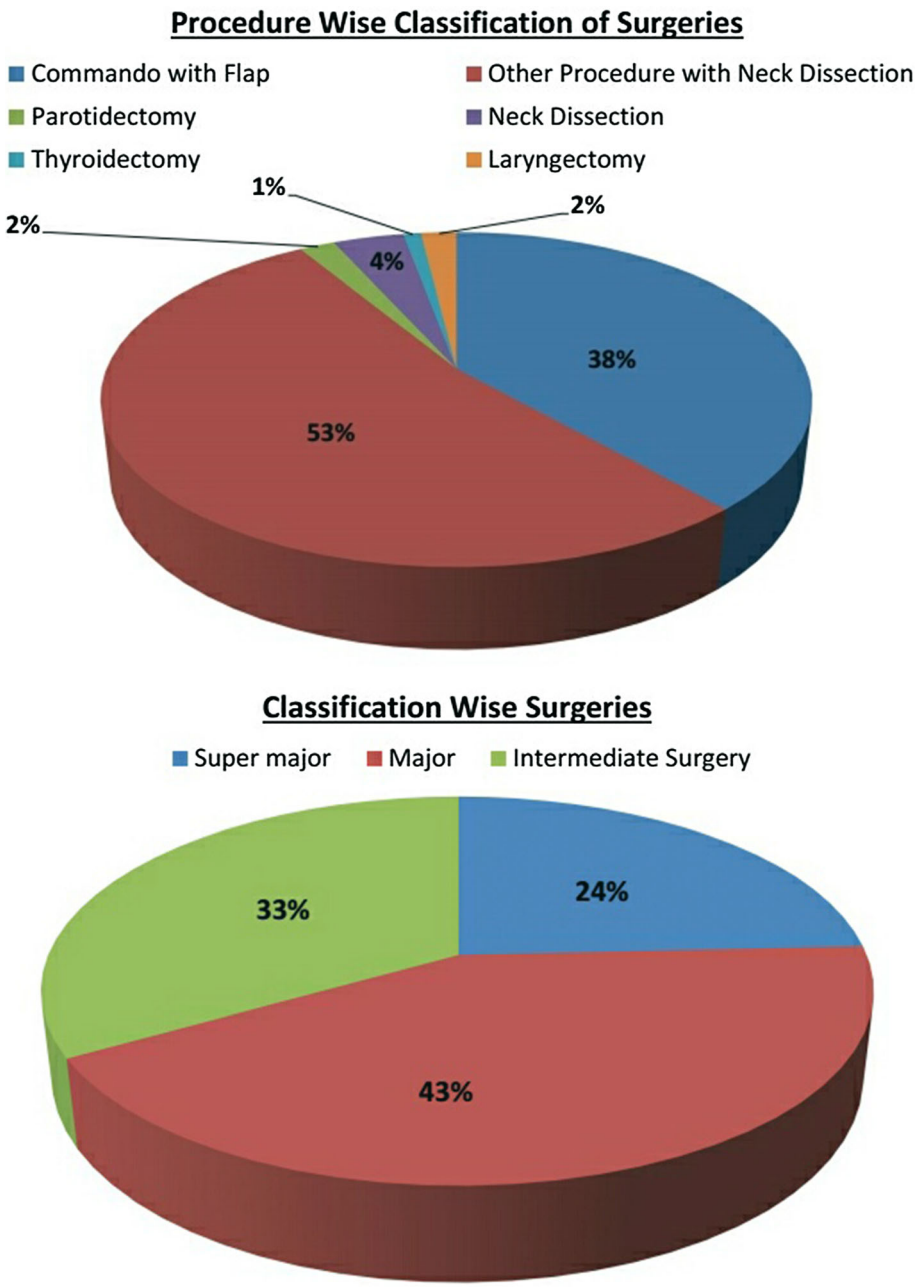
or minor procedures ranged from evaluation under anaesthesia, *for evaluating sub mucous extension such as in patients with operable lesions of the tongue to see if there is any involvement of the medial tongue or extension to the posterior aspect of the tongue to help further in proper treatment planning, and in patients of cheek cancer with moderate trismus where mouth opening was less*^{de} *to decipher local extension particularly sub mucous extension*. The other procedures categorised into minor or intermediate procedures included pan endoscopies under anaesthesia to rule out synchronous second primary cancer in the upper aero digestive tract or patients with laryngeal lesions to assess subglottic extension or, lymph-node biopsies, Caldwell luc procedure etc. The category of major operations included procedures such as wide partial glossectomy, thyroidectomy, and wide excision of the cancers of buccal mucosa, with or without reconstruction including skin grafting, neck dissection, and partial maxillectomy.

Finally the super major procedures included those with biopsy proven cancer of the oropharynx, or other adjoining areas where it was required to resect cancers in the area along with the mandible and ipsilateral neck dissection i.e. commmando operations with or without reconstruction.

The category wise break up was as follows:



Pre-operative Profiling

All patients who were to undergo a procedure under general anaesthesia underwent preoperative check-up which included routine haematology tests, renal and liver profile X-ray of the chest cardiogram and preoperative medical check-up. Those who had to receive chemotherapy or had received chemotherapy underwent additional tests those who are at risk of bleeding went through elaborate coagulation profile. All patients underwent Australia antigen testing and HIV testing. Also those who were expected to receive blood transfusions or were at risk of blood loss had a grouping cross matching done and blood was kept handy although it was a requisitioned only when required.

The investigations were done at the NABH pre accredited Indian Institute of Head and Neck Oncology, where most of the equipments are donated.

The following table explains the cost break up of pre-operative investigations:

Procedure	Cost
CBC	200/-
RBS	100/-
SGOT	100/-
SGPT	100/-
Serum bilirubin	150/-
Alkaline phosphatase	100/-
BUN	120/-
Serum creatinine	120/-
Urine RM	100/-
HIV, HBsAG	470/-
BT,CT,PT	275/-
Blood group	75/-
X-rays	400/-
OPG	400/-
ECG	150/-
2D Echo (if known cardiac disease history, changes in ECG)	2000/-
Medical checkup	600/-

Salient Points About Surgical Procedures

The surgical procedures have been performed by trained, experienced cohesive team of surgeons who work together for different procedures and are affiliated to the Indian Institute of Head and Neck Oncology. The anaesthetist is also part of the team and not changed from one case to another. In our opinion this helps to create a better intra operative understanding. Vis-a-vis suture material, antibiotics, also the same policy applied. We commonly use polyglactin 910 material for suture of various sizes (vicryl) and stapler for skin sutures. Unless there is an infection, for which a culture and sensitivity is promptly done the antibiotics used were piperacillin with tazobactum and as second line clindamycin. Use of cautery, and all surgical gadgets for safe anaesthis was done judiciously and without compromising quality.

The following is the cost break up of a commando operation.

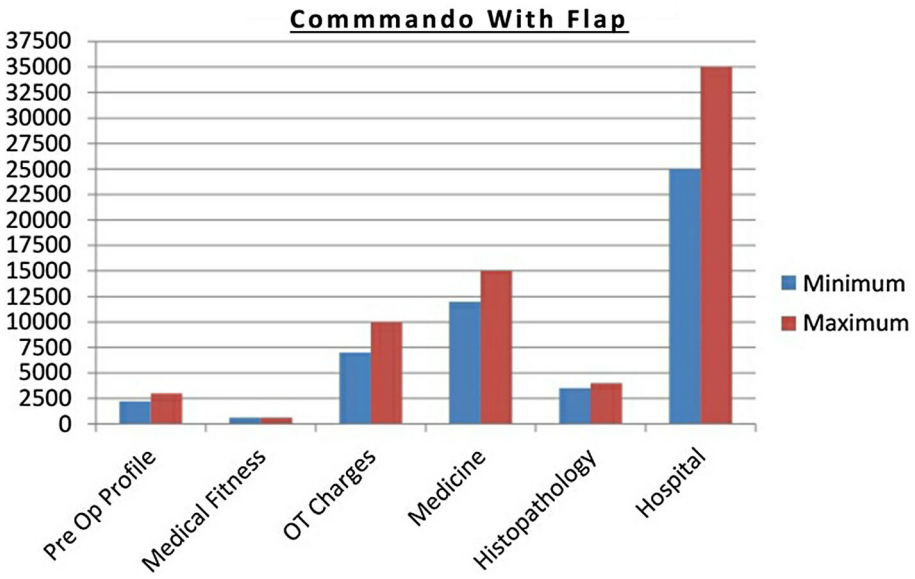
Replacement cost of medicines etc	Around 14,000/-

In the private sector anaesthesia is charged by the hour. Patient is also charged for ICU and there is also a hospitalisation charges that is accrued to the patient. The following is the breakup of the cost incurred on those accounts:

OT charge	Around 9000/-

Patients are kept in the post-operative intensive care unit overnight. In general patients require hospitalisation of five days. Histology report and when required special tests such as immunohistochemistry report is requisitioned. This is the breakup of the cost incurred on these areas:

Hospital	Around 24,000/-
Histopathology	3500/-
ICU	6000/-



For discussion purposes, in common parlance, outsourcing and out shoring are two common terms vis a vis medical facilities implying patients going out of the country and getting procedure done in other countries to-save costs. Even in that setting, patients may experience a loss of continuity of care, especially in the delivery of standard post-operative care and the treatment of post-operative complications [1]. Most studies investigating the direct health care costs of HNC have US data bases of claims to public and private payers [2]. While outsourcing is a common term in marketing language, we have used it here essentially because there is a partnership involved with private players in specific health area in this particular approach. Our own work over the years, has been to perform, wherever possible surgeries at district hospitals with the support of the state health machinery. Without compromising on quality, the competence of the professional team, a partnership has been developed where facilities which are not available have been utilised for the benefit of the poor patients. The cost of hospitalisation speaks by itself and we would not like to comment on it. Surgeon costs which may be quite variable have been excluded for the sake of discussion because it is not relevant here and on our opinion the best option would be for public project to have a surgical operation theatre. The Indian Institute of Head and Neck Oncology has almost all equipments as gifted or grant-in-aid from various donors and large equipments such as linear accelerator have beem received from the government of India housed in a building developed on 10 acres of land given by the state government of Madhya Pradesh. Services of palliative care, in doors services and chemotherapy is being offered here. Although the operation theatre facilities are not yet developed the ideal position would be for that to come up at the center itself and it will come up in months to come.

The important point which we would like to convey here is that looking at the number of patients of head and neck cancer in the country the ideal money saving approach would be to train head and neck surgical oncologist to offer oncology procedures in state controlled hospitals which would be the best way to save financial resources. In doing so we would have utilised public money for other health priorities.

Conclusion

Working with private hospitals and utilising limited facilities for doing head and neck oncologic surgery was more of a necessity for us rather than a choice.

Even in that setting the integration of low-cost but high-quality investigational facilities for preoperative tests, subsequent post-operative care and treatment have been done with the help of the non-for-profit Indian Institute Of Head and Neck Oncology and its team, and that has helped reduce cost. The cost break up is linked to several factors in private setup such as operative time. For us, at the Indian Institute of Head and Neck Oncology addition of more surgical facilities would be helpful to reduce costs, this would be done eventually. We have consistently focused on cost reduction approaches—without compromising quality—by partnering with public hospitals such as district hospitals which are under the state government, and doing head and neck oncologic surgeries, for the first time in some district hospitals and some times more than two, three times in the same district [3]. Clearly more trained

head and neck oncologic surgeons, and more centres excelling in head and neck surgery are needed to look after the large number of patients in the country, particularly in the public sector, which would be very helpful, in every way.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

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