

# **Breast Cancer Administration following Laparoscopic Surgery**

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## **Abstract**

Breast Cancer is the extremely familiar cancer among the females both in the low- and middle-income countries worldwide. The laparoscopic administration is the ordinary way of diagnostics and treatment with less postoperative complications. 40 female patients (12-55 years age) undertook extirpation of breast tumors using laparoscopy at the Department of Surgery of Liaquat University of Medical & Health Sciences, Jamshoro, Sindh, Pakistan. The diagnostics were made by ultrasonography, magnetic resonance imaging, and mammography. The complete operational duration ranged from 1-6 hours with an average of 1 hour and 45 minutes, and the average loss of blood was 8-22ml with average of 15ml. A dissection layer was chosen conferring to deepness of the mass examined by ultrasonography results and extirpated just using a capsule and extreme injuries to normal tissues of breast evaded. In 6 months follow up after operation, the intraductal papilloma observed in 1 patient, hamartoma in 2 patients, granuloma in 3 patients, and fibroadenoma in 33 patients. 8 patients had synchronous lesions and 5 reported bilateral lesions. The subcutaneous emphysema also reported in 2 patients extended to the neck region due to higher CO<sub>2</sub> inflation and a slight skin burn also seen in 2 patients. The normal breast tissues never transected either in the deep or shallow site of the breasts. As per the all patient's satisfaction with respect to the health, less infection, minimum injuries and size of scars, it is confirmed that laparoscopic extirpation is one of the best choices to treat any breast cancer tumors.

**Key Words:** Breast Cancer, Breast Surgery

## **Introduction:**

Breast Cancer is one of the most ordinary female malignancies throughout the world and its occurrences are rising continuously (1). Pakistan has the largest incidents of breast cancer

across the Asian continent. It is the 2<sup>nd</sup> leading cause of mortalities among females with alarmingly estimated 83,000 cases reported annually with more than 40,000 deaths(2). It is more unexceptional at a young age contrary all over the Pakistan as one in every nine women develops breast cancer at certain stage of her life significantly more frequent in old age approximately after 60 years. Breast cancer usually comprises non-metastatic tumors bigger than 5 cm in diameter on the skin of chest wall (3). It also includes tumors correlated with ipsilateral infraclavicular, supraclavicular, or interior mammary nodal engrossment as well as fixed axillary lymph nodes. The poor access to health care because of cultural issues and poverty along with less awareness of breast cancer are other influential factors for better demonstration (4).

Breast cancer administration has undergone a histrionic revolution in last few years with enormous advantages to patients. This revolution was because of advancement in surgical oncology strategies established in the light of few landmark breast clinical assessments conducted all over the 20<sup>th</sup> century (5). The Surgical administration of breast tumors are now renowned as major unmet prerequisites in under developed and developed countries. In 1980s, the laparoscopic surgery was introduced very first time and referred as an ideal approach among lot of surgical therapies in developed countries (6). There are increasing statistics of surgical initiatives worldwide that have recognized surgical indigence and volume is continually rising also in low income countries (7).

Laparoscopic surgical procedures for breast cancer provide the advantage of curtailing the morbidities and potential mortalities related to laparotomies. The particular clinical benefits of minimally invasive surgeries following laparoscopy include less blood loss, reduced infection rates, minimum hospital stay, earlier return to normal activities, better cosmesis, ileus, improved pain control and less medicines use (8). Laparoscopic surgery in Pakistan is not recent and its applications in breast cancer surgery are growing rapidly but very limited publications took place from Pakistan. Currently, several surgical consultants are getting laparoscopic skills for breast cancer surgery and majority of surgical units located in Lahore, Karachi, Islamabad, Multan, etc. (9).

The practices of laparoscopic surgery from few years using advanced laparoscopic operational techniques are ongoing in Pakistan for various diseases such as thoracic empyema, Wilms tumor excision, hydatid cyst, congenital diaphragmatic hernia eventration and repairment, laparoscopic assisted breast tumor extirpation, pyloromyotomy, anorectoplasty,

fundoplication, cystic abdominal lesions and germs cell tumors. Numerous guidelines for laparoscopic breast cancer management have been published since from the mid of 1990s and encouraged different surgical therapeutic attempts combined with systemic estrogen therapy, adjuvant radiotherapy and multidisciplinary administration (10). Since the publications of such guidelines, there have been many paradigms shifted in the administration of breast cancer on the way to less invasive indicative modalities during surgical approaches which have ameliorated both the psychological and physical morbidities for women with breast cancer. Number of potential benefits of instant breast reconstruction using laparoscopic advancement improves the aesthetic outcomes (11).

However, despite of all these recent advances, the current trends in breast cancer management especially its evaluation of efficiency and effectiveness is largely unidentified in Pakistan. So, considering such necessity and aim to measure the laparoscopic practices within the surgical events for breast cancer, this research has been conducted in Liaquat University of Medical and Health Sciences Jamshoro.

## **Material and Methods:**

### **Patients:**

Forty female patients underwent extirpation of breast masses using laparoscopy at the Department of Surgery of Liaquat University of Medical & Health Sciences, Jamshoro, Sindh, Pakistan. The approval of the research was taken from the ethical committee of the institution. The patients were aged in between 12 to 55 years. The benign breast masses were diagnosed in all patients using fine needle aspiration cytology, ultrasonography, magnetic resonance imaging, and mammography. The most of the patients came forward with a second opinion as other than the incision scars on the skin of breasts until the tumor exist. Notified agreement which included the succeeding clarification was gotten before the operational procedure: (i) this operative technique is the advanced choice for improvement of the cosmesis subsequent to treatment of benign tumors on breasts, (ii) the sizes of the incisions are much little comparative to past operations and the breast can therefore avoid any observable scar, (iii) common anesthesia is prerequisite as the operation includes inflation of CO<sub>2</sub> gas into the intravenous spaces while under local anesthesia, the direct excisional biopsy being made (iv) the time of procedure might be longer as compared to the direct excisional biopsy due to special technique and narrower vision, (v) the patient is indebted to stay in hospital at least on the day of

operation, and (vi) the expenses are almost double as much as for direct biopsy owed to the necessity for usual anesthesia and hospitalizations.

### **Operational Process:**

The general anesthesia was applied in the supine position and incisions of 2mm and 12mm in the mid-axillary line and a 5mm incision were made close to the axillary space. The three cuts were made in two of those patient's inframammary lines whose tumor was present in the inward portion but the sites of incision specified in all patients. Using laparoscope, an optiview (12) of 12mm was interleaved and then following repeated inflation around the tumor, specific working spaces were made with the help of a system preperitoneal distension balloon (Auto suture, Japan). After an appropriate subcutaneous dissection, the inflation was maintained by CO<sub>2</sub> at 6 mmHg pressure. After that, in the 12mm incision, an endoscope of 10mm width was interleaved (13).

After that, with the help of a 5mm Harmonic Scalpel coagulator, the directly observed tumor was dissected from the in-line tissues.

After finishing the dissection, an endoscope of 5mm was interleaved in the 5mm axillary incision. The tumor was placed in the Endocatch pouch (Auto suture) that was interleaved into the 12mm incisions and pulled out from the incision. The subcutaneous space was moistened with hot saline solution after sufficient hemostasis. In the cavity, the negative pressure drains (14) were inserted continuously from the central incision. Using sterile adhesion tape and absorbable thread, whole incisions were covered by buried sutures. The diagnoses made by hospital pathologists for histologic diagnostics of females with ductal carcinoma in situ and their mammograms exhibited diffused microcalcifications. Those patients were prescribed eligible only if histologic examines of tissues contains the microcalcifications that verified no tumor.

### **Patients Follow Up:**

All female patients underwent follow-up examine by every 6 months and performed mammography every year. The tumor spotted at the regional or local sites after the early procedure was considered a phenomenon on positive biopsy. Meanwhile, the tumor at a distance from operative site was also considered an event on indicated by radiographic, pathological or clinical findings that tumor was present. The occurrence of distant or regional

metastasis, contralateral or ipsilateral breast cancer, or another primary tumor except original breast tumor occur firstly after the procedure or the death of patient in the absence of recurrent breast cancer evidences were used to evaluate event-free subsistence. The site of ipsilateral breast tumors after operation as well as primary tumors was determined with pathological mammographic and operative reports presented to the institutional biostatistics' experts. The classification of tumors was made as occur on the boundary between two quadrants, on a specific quadrant, central on a subareolar position, at the boundary of a quadrant, on the areola, or diffusion in more than one of the preceding sites.

### Results:

The demographic results of the forty patients have been described in table 1. The 40 patients had 1.6 masses on typical ranges within 2 to 8 masses, and 11 patients reported multiple masses. The results of the operational procedure included intraductal papilloma in 1 patient, hamartoma in 2 patients, granuloma in 3 patients, and fibroadenoma in 33 patients. Eight of whom had synchronous lesions and five patients reported bilateral lesions. The complete operational duration ranged from 1-6 hours with an average of 1 hour and 45 minutes, and the average loss of blood was 8-22ml with average of 15ml. The subcutaneous emphysema as a complication after operational procedure reported in 2 patients which extend to the neck region because of highly CO<sub>2</sub> inflation and a slight skin burn was seen in 2 patients.

Attributes		Ranges
Size of tumor		2.5-11cm
No of masses		2-8
Multiplicity	Single	29
	Synchronous	8
	Metachronous	3
Laterality	Lateral	35
	Bilateral	5
Histology	Fibroadenoma	33
	Granuloma	3
	Intraductal papilloma	1
	Hamartoma	2
Operation time (per mass)		1 hour, 45 minutes
Blood Loss		8-22ml
Complications	Extended emphysema	2
	Burn	2

*Table 1. Demographic Results of Patients*

Overall, in the follow up, any postoperative iatrogenic or induration modification was not reported in the breasts and all women were exceptionally contented with the cosmetic outcomes of the surgical operation. In the dissected area, the intravenous bleeding generally disappeared within a week in all women after the procedure and they were discharged the next day after the procedure. In the hospitalized stay, there were not reported any postoperative complication after discharged and the course of recovery was ordinary. The patients frequently postoperatively visited the hospital on weekly, monthly and annually basis for a cosmesis and recurrence checkups. Currently, the overall follow-up with an average of 1.5 year is ongoing with zero recurrences of the primary mass and no irritation in the surgical breast has reported.

### **Discussion:**

Laparoscopic surgeries have expanded rapidly in numerous areas of surgery since the 1980s, and various operations have been extensively performed as standardized procedures in cancer surgeries (15). Surgical treatment in esthetic breast operation are normally expensive as the goal of the surgical procedure is not just a curing of a disorder but a cosmetic recuperation (16). Endoscopic procedures generally have a learning period. Several surgeons worldwide still continue in practicing excisional biopsy for diagnostics and treatment of breast tumors. This operation can be performed certainly at the clinic but the instant issues during incision in the breast at the tumor site and postoperative cosmetic outcomes never measured (17). However, the most of the patients with a tumor related breast mass like benign phyllodes and fibroadenoma are teenagers and therefore the position and length of the scar is a greater matter for them as compared to costs, operational time, or extent of complicatedness of the resection. Such difference between believes of surgeon and the needs of patients seems to adopt laparoscopic applications for breast cancer surgery (18).

In the current study, the mean operation time per resected tumor was shortened by more than 1 hour according to the treatment period: 2 hours and 38 minutes in the first 18 operations, and 1 hour and 22 minutes in the last 19 operations. In addition to technical skill, the critical factors of the operation were number and size of tumors. When a mass is less than 3 cm in diameter, it can usually be pulled through a 1.2-cm incision, but a mass exceeding 3 cm has to be cut in a bag in the subcutaneous space and is then taken out of the breast piecemeal. Patients with multiple masses were some of the best models for our procedure, because they were obliged to have several scars in the bilateral breast if they had received an excisional biopsy previously. In two patients, the approach of inframammary line was preferred as they had a mass in the

interior side of the breasts but the procedural skill made it probable to take the approach of mid-axillary line anywhere a mass identified due to comfortable comparative to inframammary line. The skin burn and prolonged emphysema were equally reversible in 2 patients but no more complications were reported. In the contralateral breast of one of those patients with the skin burn had metachronous fibroadenoma so again similar method was applied on her. There were not reported any adhesion or discomfort on the operative breast in all patients.

The invisible scar can never be similar with the patients having not scar at all, therefore, the laparoscopic approaches is endorsed till a mass is extremely assumed as benign during preoperative examinations. It can be possible to decide the optimal invasive margins even if a malignant neoplasm is reported secondarily after laparoscopic extirpation as the normal breast tissues are not violated by such operations. In this administration, the normal breast tissues are never transected anywhere a mass is sited, either in the deep or shallow site of the breasts. In current study, a dissection layer was chosen conferring to deepness of the mass examined by ultrasonography results and extirpated just using a capsule. Consequently, extreme injuries to normal tissues of breast also evaded.

Moreover, the inflation with the help of CO<sub>2</sub> is better than that of a retractor to observe a cancer lump particularly when the tumor is situated distant to the incisions and it has no adversative effects with the maintained pressure at around 6 mmHg. Meanwhile, the regular follow-up in benign tumor patients is hard to achieve but it is very imperative as the recurrent breast massaging once a week after the operative procedure can eliminate an adhesion if it occurs postoperatively. It is an obvious fact that several young women with the big breast masses vacillate from surgical operations as the scar often remains on the breasts after procedure. As per the satisfaction of all patients with respect to the normal health, less infection, minimum injuries and position as well as the size of scars, it is confirmed that laparoscopic extirpation is one of the best choices to treat any breast cancer tumors.

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