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Research Article

**COMPLICATIONS OF EXTUBATION BEFORE CHEST TUBE  
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Allama Iqbal Memorial Teaching Hospital Sialkot, Pakistan**Abstract:**

**Background:** A surgery that does not require even a single night stay in the hospital is called the ambulatory surgery and it is an operative management. However, due to the requirement of air leaking management, the application of ambulatory surgery is still limited in thoracic surgery. To review our ambulatory surgery institutional experience by a chest, drain removal before the extubation in thoracic sympathectomy surgery is the main objective of this research.

**Methods**

A retrospective analysis has been performed of patients who suffered thoracic sympathectomy. This was done in the duration ranging between Nov, 2014 & July 2017 and it was performed in the Thoracic Surgery Department of Mayo Hospital Lahore.

**Results**

The number of patients was seventeen who underwent thoracic bilateral sympathectomy during this research. During this study, five males were operated against twelve females. In the age ranging between 17 to 33 years, the average age was taken as 24.47 years. During all frame times, nothing such as chest X-ray disorder was identified. There was no question of developing respiratory distress during after operation period. Furthermore, no postoperative morbidities were found during the follow up. There was a level of complete satisfaction among all patients regarding the procedure at the finishing of the follow up.

**Conclusions**

Provided the patient is well selected, the ambulatory thoracic surgery procedures can be securely & effectively applied. Large number of patients can be benefitted from alleviated thoracic surgery & the progress on operative mini invasive techniques will go higher.

**Keywords:** Video thoracic surgery, Thoracic sympathectomy, Ambulatory surgery

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**INTRODUCTION:**

A surgery that does not require even a single night stay in the hospital is called the ambulatory surgery or outpatient surgery and it is an operative management. It has some benefits. Firstly, it is also known as outpatient surgery & with economic benefit it has been made a best available choice to traditional hospitalization along with largest growth. Secondly, ambulatory surgery is in fact a popular topic & a quick progressive area in many specialties being used most often for several Diagnostic & therapeutic procedures [1]. But due to dire need of air leaking management as a postoperative complication, the use of ambulatory surgery is still limited in the thoracic surgery. A limited number of studies have been conducted on this topic. This area has even now good potential for an increase in ambulatory thoracic surgery. Bilateral sympathectomy, Video-assisted mediastinoscopy & lung biopsy are considered major operations. These are included securely in outpatient thoracic surgical programmes [2].

Thoracic surgeons are struggling to speed up increasingly complicated procedures. They are making it possible only by selecting suitable patients along with good operation selection. Only those operations are selected which can be carried out safely & efficiently at day surgery units. To review our ambulatory surgery institutional experience is the major aim of this study. This is done in thoracic sympathectomy surgery by a chest drain removal before the extubation.

**METHODS:**

A retrospective analysis has been performed of patients who suffered thoracic sympathectomy. This was done in the duration ranging between Nov, 2014 & July 2017 and it was performed in the Thoracic Surgery Department of Mayo Hospital Lahore. Author has studied all those patients who have an axillary hyperhidrosis or palmo-plantar & were found very inconvenient & not responding to medical treatment. Both these types were very confused. The patients underwent bilateral thoracic sympathectomy ranging from T-2 to T-4 through a (VTS) i.e. Video Thoracic Surgery.

After their consent, just ASA I score patients were accepted and they were without any medical or surgical antecedent. The patients who needed a pneumocystis during the surgery & those with ASA score different to I with medical or surgical antecedents were not included. Under general anaesthesia, patients underwent bilateral thoracic sympathectomy. The procedure was initiated from the right side & then came to the left side. A bi-port

Video Thoracic Surgery (VTS), surgical approach was used for each side & it was 10.5 mm trocar for optic & 5.5 mm for instruments. The electrocoagulation was the technique of sympathectomy which was used in this study. One chest tube had been placed for every side connected to an aspiration system.

To verify the absence of pneumothorax or a fail of lung re-expansion for both sides, a chest X-ray was carried out in the operating room after the end of surgery. Just before the patient awakens, the chest tube removal was carried out. It was performed in the operating room starting from the right side. A manual bypass had been made by the anaesthetist and then under a lung hyperinflation, the chest tube was removed by the surgeon.

After the extubation, all the patients were discharged at the sixth hour. This was carried out before a medical control by an anaesthetist doctor & meanwhile a chest X-ray was carried out. To verify the absence of any respiratory distress & the follow-up was initiated by a phone call at the tenth hour. At the 10<sup>th</sup> & the 30<sup>th</sup> day with a chest X-ray, the patients were re-controlled at the external consultation.

**Eligibility of the procedure**

The suitability of such (AS) i.e. ambulatory surgery for hyperhidrosis was based on the following: -

- There was a quite less risk of surgery & it was followed by a complication.
- From the hospital, the distance of all operated patients was ten kilometres in a perimeter & it was facilitated with an approachable mean of transport in case of an immediate access to the emergency room was required.
- Three contact numbers were taken from every patient so that they may be kept in contact after discharge.
- All the surgeons were there for operation on the 1<sup>st</sup> day of surgery.
- In case a patient is not convinced, he can deny to be discharged on the same day.

**Collected data**

We recorded in our research Age, Gender, Chest X-ray disorder, the time frame was noted as, at day ten & at day thirty, before the extubation, before the discharge. Respiratory distress & the time frame was at day ten & at day thirty, after the extubation, before the discharge. Other postoperative complications & the time frame was at day ten & at day thirty, before the extubation, before the discharge. Patient satisfaction, the time frame was day thirty & satisfied

or not satisfied from the procedure & not satisfied from the result of surgery.

### RESULTS:

During this study, five males were operated versus twelve females with a sex ratio of 0.41. In the age ranging between 17 to 33 years, the average age was taken as 24.47 years. The average age for males was twenty-three years which was ranging between 17 to 33 years & the mean age for females was 25.08 years which was ranging between 18 to 31 years. Table no.1 gives a summary of collected data.

All the under-operation patients had an axillary hyperhidrosis or palmo-plantar. Furthermore, all the patients were ASA I without any surgical antecedent or medical.

The patients underwent bilateral thoracic sympathectomy ranging from T-2 to T-4 through a (VTS) i.e. Video Thoracic Surgery under general anaesthesia after taking their consent. The technique of electrocoagulation was employed in all under

study cases. For all cases, 1 chest tube for each side was connected to an aspiration system.

With no anomalies detected, a chest X-ray was carried out in the operating room for all cases. The removal of chest tube was carried out by starting from the right side for all patients. At the postoperative, all the patients were discharged at the sixth hour of their operation.

For all the cases, the chest X-ray carried out before discharge was also found normal. It was verified in the follow-up at the tenth hour that there was no respiratory distress which could be detected for all under study patients. Furthermore, in all the postoperative not even a single patient had developed a respiratory distress. Except compensatory sweating, there were no postoperative morbidities which had been identified during the follow & this was only detected in two cases at tenth day & one case at 30th day. At the 10<sup>th</sup> & the 30<sup>th</sup> day, chest X-rays were carried out & were found exactly normal in all under study cases. Moreover, at the end of the follow up, all the patients were in complete satisfaction regarding the procedure.

**Table – I: Collected data in different time frames**

		Time Frame				
		Before extubation	Before discharge	10 <sup>th</sup> hour	10 <sup>th</sup> day	30 <sup>th</sup> day
Age (mean, range)	24.47, 17 - 33					
Gender (M, F, Ratio)	5, 12, 0.41					
Chest X-ray disorder		No	No	No	-	No
Respiratory distress		No	No	No	No	No
Other complication		No	No	No	2	1
Satisfaction		-	-	-	-	Yes

### DISCUSSION:

The common application of bilateral thoracic sympathectomy for hyperhidrosis is for those patients who had a very inconvenient axillary hyperhidrosis or palmo-plantar & this is only used when another alternative is failed [3]. This is declared as a safe surgery & is characterized by a smaller rate of postoperative morbidities. In our point of view, compensatory sweating must not be considered as a complication but only as a side effect [4]. Number of methods are employed for sympathectomy like clip placement, complete dissection of sympatric chain or electro-coagulation. As we think it is quite simpler, we are in the habit to carry out the electro-

coagulation [5]. It is also favourable because it avoids any danger of post-operative haemorrhage along with the same efficacy as in the technique of complete dissection [6].

As the most common postoperative complication, thoracic surgery is also characterized by the air leaking. With a link to an aspiration source, the administration of operated patient was in the need of chest tube placement [7]. The type of lung intervention is the factor on which the danger of postoperative air leaking is dependent & this danger is minimum for thoracic sympathectomy. So early chest tube removal was chosen to apply for all those

patients who have to go through thoracic sympathectomy which is declared secure surgery with less air leaking risk [8].

Some of the authors discharge their patients with chest tubes on siphoning while others proposed to discharge them with chest tube linked to a portable drainage system which can safely maintain pleural cavity in aspiration [9]. Some of the teams suggest to identify the initial air leaking by using an electronic device. This was used to make the removal safely in two hours right after surgery. To take out the chest tube early on the 1<sup>st</sup> postoperative day right after a chest X-ray is another alternative [10]. To minimize the postoperative stay at hospital, all the previous procedures are declared as the most effective [11]. However, the removal of chest tube before the extubation is generally not written in the relevant literature. While our study, we haven't identified any of the postoperative complication & all the operated patients were found satisfied with the procedure [12]. Our point of view is that this method is less costly and safer. Moreover, it doesn't require any high costing equipment's or sophisticated devices.

#### CONCLUSION:

Provided the patient is well selected, the ambulatory thoracic surgery procedures can be securely & effectively applied. Large number of patients can be benefitted from alleviated thoracic surgery & the progress on operative mini invasive techniques will go higher.

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