

## Conference Paper

# Chemoport Insertion as Minimal Chemotherapy Access Complications and Forms of Patient Safety Implementation Goal

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## Abstract

Chemotherapy access measures in cancer patients can be done through 2 (two) ways, using abocath as peripheral intravenous access and insertion of chemoport under the skin. For patients undergoing chemotherapy with long treatment durations, it is necessary to use chemoports to prevent patients from some peripheral intravenous side effects, one of them being extravasation. This surgery is performed in the operating room and is based on the patient's safety standards. In 2016, while performing digestive surgeries chemoport insertion was done in 18 patients with a diagnosis of colorectal cancer. Most of the patients were elderly (66.7%) and only 3 (three) patients had complications of catheter blockage and infection in the chemoport insertion area. This suggestion was caused by the reduction in the elasticity of blood vessels in elderly people. So, it is advisable to do chemoport insertion. If complications occur, the blockage can be prevented by flushing. Meanwhile, if there is an infection complication, it is advised to immediately release the chemoport and give antibiotic when necessary. The day before the surgery, the surgeon must verify the patient's condition, marking the operating area as well as carrying out the time out procedure before the chemoport insertion operation begins. Chemoport insertion is an action that can be done to facilitate chemotherapy access especially for patients undergoing chemotherapy in long periods, and it has minimal complications.

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## 1. Introduction

One of the side effects of chemotherapy using abocath as peripheral intravenous access is inflammation of blood vessels. To reduce this effect can use chemoport. Chemoport, sometimes referred to as mediport, port cancer, or portacath, is a central venous access device implanted under the skin so that cancer patients can be given

chemotherapy. The location of the insertion central vein is the subclavian vein and jugularis [1]. These veins are on the right and left side of the patient's body. It is important to pay attention to the operating area marking procedure the day before the chemoport insertion. This action to avoid misplaced surgery, especially when on one side there are conditions that can cause contraindication [2].

Chemoport insertion is recommended by an oncology surgeon because not only inflammation of blood vessels, other effects can arise when chemotherapy medication is administered through peripheral intravenous. The continued effects that may result from chemotherapy are extravasation. Extravasation is a condition of drug or fluid leakage from the vein to surrounding healthy tissue during chemotherapy drug administration. The infiltration of chemotherapy drugs into the subcutaneous tissues cause's ulcers filled with yellow necrotic tissue and debris, often simultaneously with inflammatory responses and loss of skin tissue as well as irreversible damage from tendon and nerve tissue. Extravasation through an intravenous line averaged 0.1% to 6% via peripheral venous pathways. The incidence rate through the central venous catheter is 0.3% to 4.7% [2]. This suggests that in patients with especially long-term chemotherapy, chemoport insertion is better when compared with peripheral intravenous access [1].

Sanglah Hospital Denpasar is the highest referral hospital in Bali serving chemotherapy activities. The hospital has also implemented one day care (ODC) services for chemotherapy. To support this service, the service of chemoport insertion surgery is also served at Sanglah Hospital.

## 2. Methods

During January–December 2016 the digestive surgery department of Sanglah Hospital has did chemoport insertion surgery in 18 patients with colorectal cancer diagnosis. The ratio of the number of female and male patients is 50% equally 9 people. When viewed by age, most patients, 12 people (66.7%) have entered the elderly. Number of patients who are still at productive age (18–45 years) were 6 people (33.4%). Of all the chemoport insertion performed, 3 patients (16.7%) developed complications. The complication rate for chemoport action was quite low. Complications experienced were 1 patient suffered from non-current chemoport access problems and 2 patients had grade I infection in the chemoport insertion region marked by erythema on the epidermal side only. All of these surgery used local anaesthesia and were performed by an advanced surgical resident supervisor of a digestive surgeon.

### 3. Results and Discussion

As we get older, there will be changes in us. In elderly, there is a change in the structure of blood vessels, characterized by diminished vein elasticity. So that the blood vessels feel stiff and easily fragile and sometimes even slightly shifted from its position [3]. Such vascular conditions will be difficult in peripheral venous access because it will be very risky to extravasation so that more patent access required is chemoport insertion [2]. Any action to be taken on the patient shall pay attention to the patient's safety in accordance with the standards set by Joint Commission International (JCI). The surgical action received attention from JCI, as stated in the 4th patient safety standard [3]. In the standard it is mentioned that the step of the pertinent thing to be done by a surgeon is to verify the preoperative condition which includes checking the patient, the surgery and the area of operation. This is followed by marking the area of operation (site marking). This marking is especially important in body parts that have two sides. What if the patient's condition checks are contraindicated on either side of the patient. Prior to carrying out the surgical procedure, the operating room officer confirmed the time out process [1].

The most common early complication experienced by chemoport-attached patients is obstruction of the catheter. To overcome the problem can be done flushing on the period of 3–6 weeks [4]. While other complications that may occur is an infection in the wound insertion chemoport area. Infection is commonly caused by the bacteria *Mycobacterium fortuitum* and *M. chelonae*. If infection has occurred at a later stage, then chemoport should be removed and performed with specific antibiotics according to the results of the specificity test and its sensitivity [4].

### 4. Conclusion

Based on the results, the chemoport insertion is found that most of the patients are included in the category of elderly that is as much as 66.7%. This is most likely due to difficult access to chemotherapy in peripheral veins. Complications are very rare in patients who have chemoport attached. This action is particularly well suited for patients with difficult peripheral intravenous access and with long-term chemotherapy programs. Of the 18 patients who underwent the chemoport insertion at Sanglah Hospital, only 3 patients had complications in the form of catheter blockage and 1st grade wound infection. The chemoport insertion were performed in the operating room and

all surgeons are required to uphold patient safety which is manifestly realized in the implementation of the 4th patient safety goal.

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