

# Medical orders for laparoscopic appendectomy



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The followings are the initial and medical orders which were ordered for Jane, who is preparing to go for a laparoscopic appendectomy surgery.

Fasting from food and fluids is ordered instructing Jane not to consume anything through mouth for at least 6-8 hours before surgery, especially when undergoing general anaesthetic. Due to the reduction of volume and acidity in the stomach contents during surgery, therefore minimising the potential risk of aspiration and decreasing the risk of postoperative nausea and vomiting is vital (Brown & Edwards 2009, p. 386).

Fluid balanced chart is the measuring and recording of all diets during a 24 hours period. It is vital to note accurately the measurements of all diets in recognizing Jane who is experiencing fluid, electrolyte and acid-base disturbances (Crisp & Taylor 2007, pp. 1115-1117). Normally is ordered before and after surgery for the maintenance of ongoing assessment of the patient's hydration status to prevent severe imbalances (Crisp & Taylor 2007, pp. 1115-1117).

Intravenous therapy (IVT) was administered for Jane for the replenishment of extracellular volume due to vomiting and to balance the electrolytes in the body cells (Crisp & Taylor 2007, p. 1125). IVT is commonly used to treat many different fluid imbalances, as it aids by correcting or replacing the losses of fluids (Crisp & Taylor 2007, p. 1125). Due to restriction for oral intake before surgery, therefore IVT was ordered.

Preparation for theatre

-Check for patients identify, to ensure is the right patient

-Check for the entire medical records contents, laboratory test to ensure the accuracy of information.

-Checking for vital signs, as the anaesthetist uses this information as a baseline for intraoperative vital signs. If preoperative vital signs are abnormal, surgery will have to postpone (Crisp & Taylor 2007, p. 1556).

-Ensure that all jewellery and nail polish are removed, as during operation nurses need to assess the skin and mucosa membranes to determine the oxygenation and circulation.

-Preparing the bowel and bladder, as inhaled anaesthesia agents may block parasympathetic impulses to the intestinal musculature (Crisp & Taylor 2007, p. 330).

-Obtained consent from patient, informing them about the type of surgical, duration and all the required information (Crisp & Taylor 2007, p. 406).

-Check for any past medical history, allergies to medications and latex because during surgery patient come in contact with the allergies serious reaction can develop (Crisp & Taylor 2007, p. 1544).

-Check any preoperative medications are given. Narcotics may be given to decrease intraoperative anaesthetic requirements and to decrease pain (Crisp & Taylor 2007, p. 1567).

-Physical assessment, assess on patient's history and physical status. It is used for the indication of the patient's preoperative risk and overall outcome.

It is important to check all of the above before pushing patient to the operating theatre for the reassurance of information is well understood and to clarify any questions before surgery.

Fentanyl protocol for pain is a course whereby nurses have to go through a chain of phases for the management on how the patient is progressing through the intervals of drugs administration. It is vital for the nurses to constantly assess on the respiratory rate, sedation and pain score, for the prevention of any respiratory distress and to ensure that pain is being maintained at an acceptable level for the patient. If at any moment in the above cannot be achieved an alternative method of analgesia will be required.

## **Medical orders**

Chest x-rays are the penetration of rays through the tissues showing valuable image of the body structure which assist in the detection for tuberculosis and other serious pulmonary or cardiac disease. The normal shadow presented was to illustrate the normal size and shape of the chest wall, normal bony structure and normal lung tissue (Kee 2009, p. 596). It was ordered for the screening of any evidence for serious pulmonary or cardiac disease that might need to be addressed before surgery and for monitoring Jane's asthma condition (Malarkey & McMorow 2005, pp. 686-687).

Abdominal x-rays are usually scanned for patients with suspected appendicitis (Pagana & Pagana 2005, p. 661) and abnormal findings are helpful in predicting a problem within the abdominal region (Malarkey & McMorow 2005, pp. 686-687). Normal findings are presented when air

remains contained within the intestinal tract (Malarkey & Mcmorrow 2005, pp. 686-687). Expected results will be failure of the organ to fill the contrast agent which indicates appendicitis (Williams & Wilkins 2009, p. 175). It was ordered for screening signs of any obstruction; perforation; foreign bodies, and in rare cases, an appendicolith, which is hardened stool in the appendix.

Abdominal ultrasound is a procedure which provides accurate illustration of the appendicitis and to assess the abdominal pathologies related with abdominal pain (Fischbach & Dunning III 2006, p. 94). Normal findings are presented when the organs are normal in size (Fischbach & Dunning III 2006, p. 94). Ultrasound has a low sensitivity and specificity for the diagnosis of appendicitis. It was ordered to determine the cause of abdominal pain; any swelling of abdominal organs; any ruptured or inflamed of appendix.

Expected result will indicate the tubular structure is noncompressible, lacks peristalsis, and measures greater than 6 mm in diameter.

Full blood count (FBC) was the evaluation of blood components such as the haemoglobin; hematocrit; red blood cell count; red blood cell indices, MCV; MCH and MCHC; white blood cell count (WBC); platelet count and reticulocyte count (Fischbach & Dunning III 2006, pp. 208-209). It was ordered for the determination of specific blood components are within the normal ranges, and also effective in diagnosing infection, inflammation (Malarkey & McMorrow 2005, pp. 222-226). It is also for examining the severity of the disease process in WBC and also aids in identifying inflammation conditions in the body (Fischbach & Dunning III 2006, pp. 208-209). With an expected result of an increased number of immature cells in WBC greater than (10, 500 cells/mm<sup>3</sup>), would indicate the inflammatory or

infectious process, such as appendicitis, which is occurring in the body. As studies have shown 80-85% of adults with appendicitis have an increased volume of WBC.

Urea blood test was ordered for the assessment of protein and leucocytes in blood as it can identify an inflamed appendix with the abnormal readings due to irritation of the bladder. And also to measure kidney function, diagnose renal failure and kidney disease (Fischbach & Dunning III 2006, pp. 343-344). The normal readings are from 8 to 20 mg/dL (Williams & Wilkins 2009, pp. 41-42). The expected results can also rule out the possibility of urinary tract infection.

Creatinine blood test was ordered to evaluate the amount of creatinine in the blood (Pagana & Pagana 2005, p. 328). Creatinine is a catabolic product of creatinine phosphate, which is applicable in skeletal muscle contraction (Pagana & Pagana 2005, p. 328). As an increase in creatinine clearance, would present pregnancy and undergoing surgery is dangerous as it may affect the foetus. Normal readings are 0. 8-1. 2mg/dL (Williams & Wilkins 2009, pp. 33-39).

Electrolyte test was ordered for Jane to assess on the different levels of electrolytes and acid base balance in the body, for identifying early potential or actual imbalances due to her nausea and vomiting (Fischbach & Dunning III 2006, p. 251). Thus appropriate nursing care will be performed such as administer IV fluids to maintain a normal balance. Followings are the different components, calcium; ionized calcium; chloride; phosphate;

magnesium; potassium and sodium in blood (Fischbach & Dunning III 2006, pp. 251-253).

## **Medications**

Drug

Mode of action

Main side effects

Main contraindications

Nursing consideration

Fentanyl (Generic name) 40mcg, 3 minutely, IV

Brand names are sublimaze, actiq, duragesic, fentora

Is a very potent synthetic opioid, increasingly used for treatment of acute pain as it lacks of active metabolites and fast onset of action (medical surgical pg 141).

Through the intravenous therapy it reduces severity of pain by binding opiate receptors in the CNS. Changing the reaction and perception of pain and also depresses the respiratory centres, cough reflex.

-rash

-bradycardia

-constipation

- drowsiness

- difficulty in breathing

Patients who are

- not opioid tolerant

- with acute or severe bronchial asthma

- with hepatic or renal disease

- administer oxygen therapy due to risk for dyspnea.

- assess for sedation score, respiratory rate and pain score during each intervals of administration, for the early detection of any abnormalities

- notify doctor immediately if respiratory rate is below 8 per minutes, to prevent respiratory distress

Panadeine

Forte (1-2 tablets, 4 hourly).

Brand name is Tylenol.

It is a mixture of paracetamol 500mg and codeine phosphate 30mg.

Paracetamol is used to alleviate mild to moderate pain. It was known to work by reducing the production of prostaglandins in the brain and the spinal cord. Body generates prostaglandins in reaction to pain.



Whereas codeine is a stronger painkiller in the group of opioid. It works by replicating the action of naturally occurring pain-reducing chemicals called endorphins. Codeine imitates the action of natural endorphins by combining with the opioid receptors in the brain and the spinal cord. This blocks the transmission of pain signals sent by the nerves to the brain. Therefore, pain will be reduced.

-Constipation

-Nausea

-Vomiting

-Stomach pain

-Dizziness

-Drowsiness

-Skin rashes

-Sweating

-bronchospasm

Patients who are

-hypersensitive to drug, bronchial asthma, respiratory depression and shock.

-allergic to paracetamol or codeine.

- taking any medication that cause sleepiness or drowsiness, medication used to relax muscles
- Reassess patient's level of pain after 15-30 minutes
- Give before patient has intense pain for a full analgesic effect.
- Monitor coughs type, frequency, respiratory function and circulatory status, to prevent patient from going into respiratory distress.
- May cause constipation, provide stool softeners.
- Do not serve more than prescribed doses; do not administer more than 8 tablets in 24 hours.

The followings are the acute and potential problems that Jane might be experiencing after laparoscopic surgery.

Acute pain due to surgical incision made at abdomen area (Ladwig & Ackley 2008, p. 151).

Potential for imbalanced nutrition: less than body requirements related to increased proteins and vitamin requirements for wound healing and decreased intake secondary to pain or diet restriction (Ladwig & Ackley 2008, p. 151).

Potential for ineffective breathing pattern related to the effects of anaesthesia and Jane's past medical history of asthma (Ladwig & Ackley 2008, p. 151).

Potential for infection related to surgical incision and also due to the environmental pathogenic organisms (Brown & Edwards 2009, p. 420).

Potential for urinary retention related to anaesthetic use during surgery (Ladwig & Ackley 2008, p. 151).

The above were arranged in that order due to pain is usually the most common complications after surgery, as there is an incision made to the skin and with minimal pain will be present even with a small incision. Secondly, due to the restriction of diet prior to surgery and signs of vomiting, as a result nutrition imbalance is present. Thirdly, due to Jane's past medical history of asthma and also the use of anaesthesia which may suppresses her respiratory system as a result causing ineffective breathing pattern. Fourthly, due the post-operative incision infection to the wound is commonly seen due to the aggressive manipulation of the infected appendix and increased use of fluid as a result potential risk of producing greater contamination of the peritoneal cavity (Gupta et al 2006, p. 378). Lastly, after the use of anaesthetics during surgery, and have not worn off yet resulting in urinary retention in Jane.

Nursing Diagnosis: Acute pain at wound site related to surgical incision evidenced by patient complaining of pain and on a score of 5/10 on the pain scale.

Patient Aim: Patient will verbalized relieved of pain and patient's acceptable level of pain will be maintained at a score of minimum pain of 1 - 2 /10

Nursing interventions

## Rationales

Assess Jane's level of pain using the pain score, such as numerical descriptive pain scale (Ackley & Ladwig 2008, p. 604).

-for the systematic ongoing assessment and documentation enhance a better pain management plan (Ackley & Ladwig 2008, p. 604).

Observe Jane for any of the followings related to pain

- location

- intensity

- characteristics

- duration

- nature of pain

- redness

- swelling

-it is vital to identify the location of pain, in order for the effective management of pain

-pain on wound site is common, but yet assessment for pain on other area is vital too, in order for additional interventions to be given for the relief of pain and promoting comfort

- to note and investigate changes from previous reports to rule out worsening of underlying condition/ development of complications

- assess whether pain has been moved to another area such as visceral pain

Assess for vital signs at a interval of every hour after surgery for the first 24 hours, such as

- respiratory rate

- heart rate

- blood pressure

- sedation score

- pain intensity

- opioid may cause respiratory depression due to the reduction of the responsiveness of carbon dioxide chemo-receptors in the brain. This can be prevented with the help of assessing sedation score.

Assess and document the intensity of pain when the onset of pain is present, and be aware of any pain producing procedure (Ackley & Ladwig 2008, p. 605).

- systematic ongoing of pain assessment and documentation provide nurses with a better understanding of Jane's pain and in order to designed better pain management interventions for Jane (Ackley & Ladwig 2008, p. 605).

Assume that Jane, whom has undergone a surgery, is experiencing pain and treated accordingly (Ackley & Ladwig 2008, p. 605).

-pain is associated with certain procedures such as surgery, although with the absence of Jane reporting of pain, nurses should assume pain is present and treat it (Ackley & Ladwig 2008, p. 605).

Establish a comfort-function goal with Jane, such as assess what is the appropriate level of pain is considered as comfortable for her (Ackley & Ladwig 2008, p. 604).

-for the determination of the pain rating which allow nurses to maintain comfort level for Jane (Ackley & Ladwig 2008, p. 604).

Assess whether Jane need the help of either an opioid or non-opioid analgesics.

Administer analgesic medications ( Panadeine forte) as ordered at an interval of every four hours

Use non-pharmacological interventions to relieve pain, such as

- massage
- distraction
- relaxation techniques
- warm and cold application
- breathing exercises

- proper positioning
- relief pain with the fast onset and pain is at a tolerable level with the help of analgesic.
- drugs are administrated slowly to allow optimal pain management with minimal to no adverse drug side-effects
- enhance comfort for Jane
- as effective pain management will promote optimal healing and prevent complications
- to allow patient to maintain acceptable level of pain
- provide medication before the pain becomes severe
- assist nurses to provide the most effective analgesia and selected non-pharmacological interventions to relieve pain , by distracting patient away from pain stimulus
- for the planning of effective pain relief interventions

Describe the type of pain management plan to Jane, such as the medication ordered, adverse effects, and complications (Ackley & Ladwig 2008, p. 605).

-it is vital for Jane to understand the treatments and the adverse effects and the natural of pain for the enhancement of pain control (Ackley & Ladwig 2008, p. 605).

Teach Jane deep breathing and coughing exercise

- allow Jane to relax for enhancement of pain management

- deep breathing helps by expanding the alveoli and enhances normal respiratory function

- coughing improve respiratory secretions so to prevent blockage to the bronchioles

Nursing Diagnosis: Potential for infection at wound site related to surgical incision and also due to the environmental pathogenic organisms and the imbalance of nutrition and fluid intake

Patient aim: No evidence of wound infection during hospital stay, and no evidence of infection, such as fever, pain or swelling at operative site

Nursing interventions

Rationales

Use strict aseptic technique in performing wound dressing such as sterile dressing technique and perform hand washing or alcohol hand rub before attending to patient

- to prevent the contamination of the wound and to reduce infection of wound due to the surrounding organisms

- for the prevention of nosocomial infection with the universal precautions of proper hand washing

Maintain adequate hydration and electrolyte balance by encouraging fluid intake (Ackley & Ladwig 2008, p. 495).

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-to prevent imbalances that would predispose to infection (Ackley & Ladwig 2008, p. 495).

- Water is the main component of maintaining a state of homeostasis. It is the medium in which most metabolic and chemicals reactions in the body take place

-fluid intake helps to thin secretions and replenish fluid in the body during fever

(Ackley & Ladwig 2008, p. 495).

Check wound site for any discharge such as, pus

- If there is discharge of pus indicates that wound infection is present.

Observe for neutropenic temperature (Ackley & Ladwig 2008, p. 496).

-as the first sign of infection is fever (Ackley & Ladwig 2008, p. 496).

Note and report of any laboratory results (Ackley & Ladwig 2008, p. 495).

-as an increased in white blood count, indicates the presence of infection (Ackley & Ladwig 2008, p. 495).

Provide/ encourage balanced diet, emphasizing proteins to feed the immune system

-as immune function is affected by protein intake and vitamins.

-a deficiency of these nutrients puts the patient at an increased risk of infection

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Observe for any signs of infection such as

- redness

- warmth

- discharge

- increased temperature

- assessing for the signs of infection help nurse for the early detection of any abnormalities which can be notify to the doctors

Administer analgesia as ordered e. g. paracetamol

- for the decrease of inflammatory response

- lower temperature related to infection

Cleanse incision site daily as needed with povidone-iodine or other appropriate solution

- to prevent the growth of bacteria at wound site

- prevention and treatment of skin infections and wounds