Mitral Valve Replacement

A Nursing Care Study

BEENA M.S.

Mr. P., 28 years, a victim of adolescent rheumatic fever, was referred to our Institute with a history of exertional dyspnoea, palpitation and cough of three years' duration. He was seen in the outpatient department, a thin built man of fair complexion. He is the eldest son of a middle class Christian family. He has completed his graduation and could not proceed with his studies because of the illness. His parents are alive and healthy. None of his close relatives have any major illness.

His Chest X-ray, ECG, Echocardiogram and fluroscopy revealed a calcific mitral stenosis, and gross enlargement of left atrium. He was registered for early Mitral Valve Replacement and sent home on drugs.

At home after 2-3 months he had an exacerbation of symptoms and got admitted in a local hospital. They had treated him with heavy doses of diuretics and digitalis but he developed pedal oedema, ascites, raised JVP and other symptoms of congestive heart failure. He was referred back to our Institute and got admitted here on May 10, 1985. Since Mr. P. was admitted with congestive heart failure, he was kept on complete bed rest. Fluid intake was restricted, and 3 gm salt diet was given to him. Digitalis and diuretics also were administered.

Investigations like haemogram, serum electrolytes, serum bilirubin estimation, urine routine examination, Echocardiogram, ECG, and chest X-ray were done. Serum bilirubin levels were high. So a high carbohydrate, low fat, diet was given to him to control Jaundice. After a few days' rest, he was gradually ambulated. Mitral Valve replacement was planned for May 23, 1985.

Mitral Valve Replacement

Mitral Valve Replacement is indicated (i) when there is extensive calcification of the valve leaflets, (ii) when there is marked mitral insufficiency, (iii) when the chordae tendinae are thickened and fused, (iv) when there is bacterial infection in the valve, and (v) when the repair techniques do not make a haemodynamically acceptable valve. The damaged valve is removed and an artificial heart valve is sutured into place. The commonest valves used are 'B' jork-shiely, and Starr-Edwards Valves.

Pre-operative Preparation

Because of the suffering for three years, Mr. P., was willing for the surgery. But his parents were afraid about the outcome of the surgery. Proper explanation was given to his parents by the surgeon. Mr. P. was told the need for surgery, how he can lead a normal life with a prosthetic valve, the need for the pre-operative preparation, the need for anti-coagulant therapy following surgery, etc. He was allowed to talk to patients who were recovering after valve replacements and was given some literature regarding valve replacement. Deep breathing and coughing exercises were taught to him with the help of Physiotherapist. Pre-operative orientation to intensive care unit was carried out.

Informed Consent

After explaining to Mr. P.'s father about surgery and the risks involved, a written consent was obtained.

Physical Preparation

The aim of physical preparation is to place the patient in the best possible physical condition prior to surgery. The specific objective in the case of Mr. P. were: To control congestive heart failure; To improve general health; To prevent any foci of infection; To prevent complications.

The various measures taken in the case of Mr. P. were: a. Decongestive therapy; b. Cross matched five units of fresh blood; c. Skin shaving from chin to toe followed by scrub bath on previous day; d. Pre-anaesthetic check up; e. Antibiotic sensitivity test; f. Light dinner, proctoclysis enema and mild sedation on previous night.

On the Day of Operation: g. Scrub bath, cleansing the skin with ether and spirit, and applying sterile towel over chest; h. Cap on head and fresh dress to wear; i. Ryle's tube insertion; j. Premedication and Antibiotic. (Inj. Morphine 10 mg I/M; Inj. Hyoscine 0.4 mg I/M; Inj. Gentamycin 40 mg I/M; and Inj. Cloxacillin 500 mg I/M).

Relatives were allowed to see him prior to sending to O.T. He was shifted to O.T. with all necessary records, accompanied by a Staff Nurse, who handed him over to the theatre staff. His relatives were allowed to wait in the waiting room.

Operation

Mitral valve replacement was done under Cardio-pulmonary bypass. The damaged valve was removed and sent for histopathological examination. The valve was replaced with 'B' jork Shiely valve. There was no intraoperative complication. After surgery Mr. P. was shifted to the intensive care unit.

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A brief description of Mr. P.'s post-operative care plan is given below:

Objectives	*Actions*	*Evaluation*
(i) To provide adequate tissue oxygenation	1 Intermittent positive pressure ventilation	
	2 Sterile endotracheal suctioning	
	3 Milking chest drainage tube.	
	4 Blood gas estimation.	Arterial blood gases satisfactory.
	5 Observation for cyanosis, and reduced breath sounds.	No clinical signs of respiratory distress.
	6 Changing position	Extubated on the first post-operative day.
	After extubation	
	6 Oxygen inhalation 6L/Mt through polymask.	
	8 Steam inhalation and chest physiotherapy.	
	9 Deep breathing and coughing exercise.	
	10 Changing position.	No pulmonary complications.
(ii) To maintain adequate cardiac output	1 Continuous monitoring of heart rate, arterial pressure, central and peripheral temperature.	Developed ventricular premature contractions. Controlled with Inj. Xylocard 100 mg bolus dose followed by a xylocard drip.
	2 Hourly checking of CVP and urine output.	Other parameters within normal limits.
(iii) To maintain fluid and electrolyte balance.	1 CVP monitoring hourly.	
	2 Adjusting Intervenous fluids.	
	3 Measuring hourly urine out put, and chest drainage.	Chest tube removed on the first post-operative day.
	4 Observe for signs of fluid retention.	Sending blood for serum electrolytes and haemogram. Serum K was low (2.85 mEq/L). Corrected with 1.5 gm KCl drip.
	5 Maintaining accurate intake output chart.	Oral fluids started and tolerated from second post-operative day.
(iv) To prevent complication	1 Aseptic precautions in doing endotracheal suctioning, and in handling all intravenous and intra-arterial lines and maintaining a closed drainage system for urine drainage.	Transfered to Surgical Ward on 4th p.o. day. No wound, urinary tract, or respiratory infection.
	2 Antibiotic therapy.	
	3 Change of position in acute stage followed by gradual ambulation.	Superficial skin erosion at sacral region which was healed well within one week.
	4 Proper chest physiotherapy.	Wound kept open from 4th p.o. day.
	5 Expose incision to air	
	6 Anticoagulant therapy and prothrombin checking.	Sutures removed on 8th p.o. day. Wound healthy.
	7 Checking for any bleeding from bowels, bladder, subcutaneous skin, gums etc.	Started on Inj: Heparin after chest tube removed and maintained on Tab. Dindevan from 3rd p.o. day. Inj. Heparin discontinued on 6th p.o. day. Serum bilirubin within normal limits.
	8 High carbohydrate, low fat diet.	

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Creativity Has its Unique Value

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is good or bad for the care of her patients.

Creativity leads nurses to read, remember and think but makes aware of reasoning and reporting. Creativity shows to a nurse that experience and knowledge is equally imminent for becoming efficient nurse but eagle's eyes are needed to gain experience and knowledge.

A nurse should always ask herself how she wants to be treated and treat others in the same way but acquire ability to approach and skillful action. If a nurse is creative she will try to absorb tears and laughter of all but make her personality tranquilised.

Creativity will lead a nurse to increase intelligence, inculcate interest, interact and interchange ideas but be independent in decision-making and judgement, creativity will also lead her to give and take, talk and listen, but very tactfully.

Bibliography

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Mitral Valve Replacement

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Post-operative Nursing Care

The objectives of post-operative nursing care after valve replacement are: To provide adequate oxygenation; To maintain adequate cardiac output; To maintain fluid and electrolyte balance; To prevent complications like wound infection, pressure sores, bleeding disorders, etc.

Discharge Plan and Advice

Mr. P. was discharged on the fifteenth p.o. day, that is on June 6, 1985. He was afebrile, ambulatory, and his wound was clean and dry. Special advices given are: Continue Anticoagulant therapy; Check Prothrombin monthly, and adjust dose of Dindevan; Avoid self medication specially Salicillates, Antihistamines etc., which will interfere with prothrombin time; Signs of over anticoagulation and what to do; Hearing the click sound of valve functioning is normal; All minor surgical procedures to be done under Antibiotic coverage; Treat all minor infections; Check up after one month.

Reference

Luckmann Joan and K.C. Sorensen. *Medical Surgical Nursing: A Psychophysiological Approach:* Philadelphia: W.B. Saunders, 1980. p. 893-903.

Andhra's Annual Meet

The XX annual conference of the TNAI and of SNA of the Andhra Pradesh State branch will be held on June 10 and 11, 1988 at CSI Hospital Karim Nagar.

Theme : Responsibilities of Nurse for Health for All—All for Health.

Registration fee from T.N.A.I. members Rs. 20/-.

Registration fee from S.N.A. members Rs. 10/-.

Boarding and Lodging Rs. 25/- per day per head. The charges are payable in advance and should be sent by M.O. only to the Organising Secretary, Miss D. Simon, Nursing Superintendent, C.S.I. Hospital, Karimnagar (Distt).

Registration Form alongwith self-addressed stamped (60 paise) cover should be sent to the Organising Secretary before 1 June 1988.

Entrance fee for competitions:

Individual : Rs. 3/- for each item
Group : Rs. 5/- for each item

Registration forms for competetion can be obtained from state S.N.A. Advisor, Mr. T. Stephen. St. Joseph's Hospital, Nellore,

Paid Secretary for West Bengal

The West Bengal Branch of Trained Nurses' Association of India desires to appoint a Paid Secretary based in Calcutta. Applications are invited from Nurses only. Details of terms and conditions for the appointment are available from Miss Malbika Das Gupta, Secretary, West Bengal State Branch, TNAI, c/o Nursing Suptdt., Medical College Hospital, Calcutta-700012. Last date for submission of application to the above address is June 15th, 1988.