



RE-EXPLORATION IN CARDIAC SURGERY POST CARDIO PULMONARY BYPASS – A DESCRIPTIVE STUDY

Cardiology

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ABSTRACT

OBJECTIVE: Cardiac Surgery being the most modern and conceptualized surgery which involves cardiopulmonary bypass, Clotting mechanism, Temperature Control, Haemodilution and Cardioplegic arrest, etc'. In patients exposed to cardiopulmonary bypass, bleeding following surgery is excessive in up to twelve percent of patients in whom subsequent re-exploration is required². Several studies have evaluated the impact of postoperative bleeding on acute patient outcomes^{3,4}.

KEYWORDS

Cardiopulmonary bypass, bleeding, hemostasis, tamponade.

MATERIAL AND METHODS:

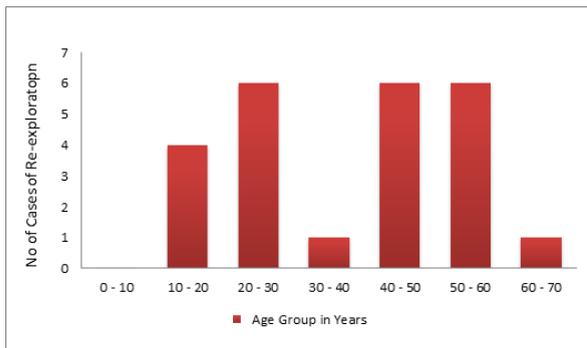
The present study was conducted at Department of Cardio thoracic Surgery, Rajiv Gandhi Government General Hospital, Chennai from JANUARY 2017 to JANUARY 2018.

Among 1131 patients who underwent cardiac surgery under cardio pulmonary bypass. Patients who had problem of bleeding underwent Re exploration. An overall incidence of Re exploration was 2.12% (24 / 1131) of patients. Patients included in the study belonged to both sexes and age groups varying from 11 to 68 years.

The patients were subjected to routine and special investigations if indicated. Investigations done are,

HB% Packed cell volume (PCV), Total Count (TC), Differential count (DC), Erythrocyte Sedimentation Rate, Platelet count, Bleeding time, Clotting time, Activated clotting time, Renal function tests, Liver function tests, Chest X ray, ECG, Echocardiogram, CT Chest, Coronary angiogram.

RESULTS:



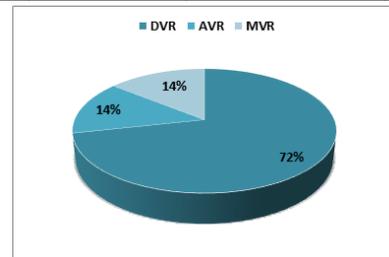
“The study did not indicate increased incidence of Reexploration among any age group in particular.”

“Incidence was equally distributed among all age groups.”

“It was as high as 25% among the patient belonging to three different age groups (20 - 30), (40 - 50) and (50 - 60).”

Incidence of Reexploration was 58.3% (14/24) among patients who's CPB time exceeded 120 minutes.

| Total No. of Reexploration | Cardio pulmonary bypass time | No. of Reexploration in relation to CPB time | Percentage |
|----------------------------|------------------------------|--|------------|
| 24 | 0 - 30 | 3 | 12.5 |
| 24 | 30 - 60 | 1 | 4.16 |
| 24 | 60 - 90 | 5 | 20.83 |
| 24 | 90 - 120 | 1 | 4.16 |
| 24 | 120 - 150 | 6 | 25 |
| 24 | 150 - 180 | 6 | 25 |
| 24 | 180 - 210 | 2 | 12.5 |



“Accounting for 29.1% of all cases of Reexploration. 71.4% (5/7) who had under gone Mitral Valve replacement patients accounted for 71.4% (5/7) of Reexploration.”

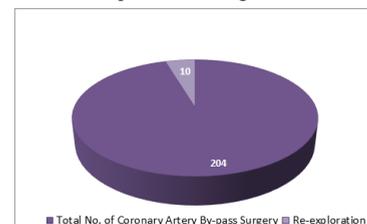
“Aortic valve replacement patients accounted for 14.2% (1/7).”

“Double Valve replacement patients accounted for 14.2% (1/7)”

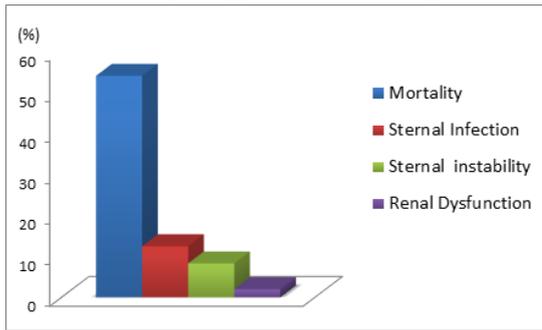
“Overall Mortality following Reexploration in this group was 71.42% (5/7).”

“7 Patients who had a Reexploration after Valve replacement Surgery 28.5% (2/7) of the patients were undergoing Mitral Valve Replacement for Restenosis.”

“One patient who was Reexplored for Post Operative bleeding had a Left Ventricle Free Wall rupture following Mitral Valve Replacement.”



CABG patients who had Reexploration accounted for 46.15% (6/13) of the overall mortality among patients who had Reexploration.



During the study Surgical sites were identified as the cause for post operative bleeding which required Reexploration in 66.6% (16/24) of the patients. Bleeding from Periosteal Edges of the sternum accounted for 16.6% (4/24) of the patients. No site of bleeding was identified in 16.6% (4/24) of the patients. Bleeding from Anastomotic site among CABG patients was identified as the most common cause for bleed accounting for 30% (3/10) of Reexploration in CABG patients.

DISCUSSION:

The overall incidence of Reexploration among patients following Cardiac Surgery under Cardio Pulmonary bypass was 2.12%. Comparative study of Reexploration among patients who underwent CABG during this study with that of reexploration for hemorrhage following coronary artery bypass grafting by Dr. Lawrence. J. Dacey^{5,6}.

| | Present Study | Lawrence J. Dacey |
|---------------------------|---------------|-------------------|
| Incidence | 4.9% | 3.3 % |
| C.P.B. Time > 150 minutes | 60% | 11.1% |
| In Hospital Mortality | 60% | 9.5% |
| Distal Anastomosis | 30% | 12% |

CONCLUSION:

Attention towards meticulous haemostasis prior to closure is Mandatory⁷. Sound surgical technique will reduce incidence of bleeding from sites of Cannulation and Anastomosis⁸. Adoption OFF PUMP CABG has shown to reduce incidence of post operative bleeding and Morbidity when compare to ON PUMP CABG⁹. Adoption of Hemostatic Technique for internal mammary artery anastomotic bleeding by which hemostasis can be achieved without the risk of anastomotic stenosis or aggravation of the bleeding, as it avoids placing sutures over the anastomotic suture line¹⁰. Patients predicted to have increased risks of bleeding may benefit from prophylactic use of aprotinin, aminocaproic acid, or other agents shown to reduce hemorrhage¹¹⁻¹².

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