

Left breast necrosis after coronary artery bypass graft surgery

Koroner arter baypas greft cerrahisi sonrası sol meme nekrozu

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Breast necrosis is an extremely rare complication following coronary artery bypass grafting (CABG). Eighteen left breast necrosis cases after CABG were reported between 1974 and 2020.^[1] There is one case with bilateral breast necrosis reported in the post-CABG period in the current literature.^[2] Older patients (>65 years) were more likely to be morbidly obese and had large tubular breasts. Other risk factors for breast necrosis included left internal thoracic artery (LITA) usage for graft, chronic renal insufficiency, diabetes, and hypertension. A 74-year-old female patient was admitted with severe chest pain that exaggerated with exertion. The patient had a large breast with type 3 severe sagging of both breast according to Regnault P. classification.^[3] Three-vessel coronary artery disease was confirmed by angiography. The patient had a history of a diabetes, hypertension, and smoking. Four-vessel CABG by using a single LITA was performed. The postoperative course was uneventful and the patient was discharged on postoperative Day 6. However, the patient was re-admitted to our department on postoperative Day 23 due to left breast pain and discoloration. There was severe necrotic appearance in the left breast (Figure 1). There were also severe sternal dehiscence and superficial wound infection on the previous sternotomy incision. There was no microorganism yielded from several wound cultures. The patient was re-taken into the operating room. Firstly, left mastectomy incision was done and, then, previous median sternotomy incision was re-opened and all necrotic tissues were removed. Sternal wires were re-approached to obtain sternal stability. *Pseudomonas aeruginosa* was yielded from

the resected tissues. Treatment with vancomycin (3×500 mg/day) and gentamycin (1×160 mg/day) was initiated. Three days after surgery, extensive wound suppurative discharge began and vacuum-assisted closure (VAC) was applied. Unfortunately, the patient died on postoperative Day 23 from multiorgan failure.



Figure 1. Left breast pain with discoloration. There was severe necrotic appearance in the left breast. There was also sternal dehiscence on the previous sternotomy incision.

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In women undergoing CABG with LITA, left breast necrosis is more likely to occur in those who have large breast tissues, atherosclerotic risk factors such as chronic hypertension, diabetes, and hyperlipidemia.^[4] Huge breast size in any rare case may be perfused selectively from LITA and its inappropriate harvesting with large pedicle may predispose the breast to necrosis. On the other hand, risk factors such as hypertension, diabetes, and smoking which aggravate the atherosclerotic changes in the deeply locating perfusing arteries. End-stage renal failure requiring renal replacement therapy is also a strong predictor of breast necrosis after CABG with LITA. Several breast necrosis were reported in end-stage renal disease patients.^[1,2,4] Calciphylaxis (calcific uremic arteriopathy) may cause medial calcification on middle-sized arteries and intimal fibroplasia in end-stage renal disease patients due to imbalance of calcium and phosphate levels. Calciphylaxis may cause extensive skin necrosis in uremic patients. Parathyroid glands removal can be performed to treat calciphylaxis symptoms. Most of breast necrosis patients are obese and have large, pendulous breasts with Grade 3 ptosis. These ptotic breasts stretch the skin, with thinning of the subcutaneous tissues.

In conclusion, the arterial blood supply may become attenuated, as it travels increasing distances to nourish excessively large breasts. Breast slings may prevent breast ptosis/slagging that may increase the breast blood flow.

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REFERENCES

1. B S, Khanna A, Song C. Ischaemic breast necrosis following coronary artery bypass grafting using left internal mammary artery: Understanding the risks. *ANZ J Surg* 2021;91:1266-70. doi: 10.1111/ans.16729.
2. Al Sayegh J, Alazhri J, Albadr S. First case report of bilateral breast necrosis following coronary artery bypass graft using left internal mammary artery. *Breast J* 2021;27:832-7. doi: 10.1111/tbj.14287.
3. Regnault P. Breast ptosis. Definition and treatment. *Clin Plast Surg* 1976;3:193-203.
4. Har-Shai Y, Ammar R, Taran A, Barak A, Mayblum S, Uretzky G. Partial breast necrosis after MIDCABG via small anterolateral thoracotomy. *Ann Thorac Surg* 1998;65:553-5. doi: 10.1016/s0003-4975(97)01361-1.