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RESEARCH ARTICLE

NITROGLYCERINE PATCH: DERMATOLOGICAL POINT OF VIEW- A CASE REPORT

Harshita Sharma, Ashwin Charaniya and Nandita Gautam

[1]Department Of Dermatology, Venereology and Leprosy Varun Arjun Medical College and Rohilkhand Hospital
[2]Department Of Dermatology,Venereology and Leprosy Rohilkhand Medical College and Hospital, Bareilly

[3]Department of Dentistry Varun Arjun Medical College and Rohilkhand Hospital, Banthara.

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Abstract

There may occasionally be venous congestion in a free flap lacking venous anastomosis blockage or other biological causes of decreased venous drainage (hematoma, seroma compressing the pedicle). The researchers advise applying a nitroglycerine patch in this situation very few hours before to the surgical investigation of the anastomosis in the crowded area of the flap. The surgical exploration could be avoided if the clinical characteristic of the flap improves quickly. The researchers emphasize that using a nitroglycerin patch should not be viewed as a treatment for free flap venous thrombosis but rather as a helpful tool that should only be employed when a surgeon is unsure of whether or not to review the anastomosis.

Introduction:-

Vascular thrombosis, which often occurs 3 days after surgery, but can occasionally happen afterwards, is the source of the majority of surgical problems following tissue transfer surgery. There still are numerous methods for determining the viability of a flap. Clinical observation and Doppler vascular pedicle monitoring are the most widely used techniques. When the flap has a skin island, the evidence from clinical is highly helpful. Since it can develop over several hours and has low flow and low pressure, venous thrombosis happens most commonly. Typically, a venous obstruction causesoedema and skin discoloration. A needle poke during initial venous blockage will result in a fast black blood clot. The ability to comprehend and recognise the early indications of flap suffering is crucial for determining whether surgical explorations, more pharmaceutical treatments, or other treatments are required. A timely surgical exploration is required if a flap's vascular viability is in dispute or if there is a suspicion of venous thrombosis at the anastomosis [1].

Whenever there is hematoma and seroma that could constrict the vascular pedicle, surgical exploration is still necessary. There may occasionally be venous congestion of the flap without venous vascular obstruction at the anastomotic location. In certain cases, the anastomotic site or other organic causes of reduced venous drainage are

Corresponding Author:- Dr. Nandita Gautam
nanditagautam63552@gmail.com

unproblematic during surgical examination. This type of gradual partial flap loss due to poor vascular supply may necessitate further surgical procedures, including numerous debridements to remove necrotic tissue and stop subsequent problems like infections as well as to enhance the result. The article describes their experiences using a nitroglycerine plaster to treat a free DIEP flap's venous congestion. beginning in the fifth.

ClinicalCase

The 38-year-old woman had a quadrantectomy on her left breast for dysplasia and a right mastectomy for ductal cancer. Right breast reconstruction that used a delayed free Diep Flap technique was carried out using recipient vessels taken from the internal mammary vessels. Less than 2 hours passed during the ischemia. The flap appeared to be well-perfused. The patient had no risk factors or systemic diseases and didn't smoke. Also on fifth day following surgery, the patient displayed an alarming violet patch in the medial section of the flap that quickly covered about half of the flap (Figures 1(a) and (b)).The tram flaps' area III belonged to this region. The needle prick induced the outflow of red blood in the lateral area of the flap and black blood in the medial region, and the Doppler signal appeared acceptable.

The patient was informed by the doctors that a surgical examination of the anastomotic location might be necessary, but the patient steadfastly refused. The researchers made the decision to wait for a few hours in order to assess the progression of the flap's treatment failure and to rule out the potential that this cyanotic feature was brought on by a transient issue, such as the patient's position or other factors.

A nitroglycerine plaster was put to the flap precisely over the violaceous and crowded area during this waiting period. The plaster contained 10 U of nitroglycerine. In order to more accurately assess the expansion or contraction of the suffering area, the blue region's boundary was sketched with a pen. The flap improved four hours after the plaster placement.Thesurgeonsdecidedtowait.

(a)

(b)

Figure 1:- (a) Violaceous area presented on Diep Flap in 5thday after surgery; (b) Alarming violaceous area developedinfew hours,in5th daypost-operative.

The flap looked less violaceous and edematous the following day than it did the day before. The patient disavowed any side effects, even a single headache.(105/70) The blood pressure was low (Figure 2). The boundary line

indicated a violaceous region decrease of 1 cm/die, which persisted over the following days. For seven days, the flap received daily plaster until nearly all of it turned pink (Figures 3-5). During two weeks, the flap showed no congestion symptoms and had good colour, texture, and consistency. A 2 cm by 2 cm necrotic region was left and was surgically removed. The result was positive (Figure 6).

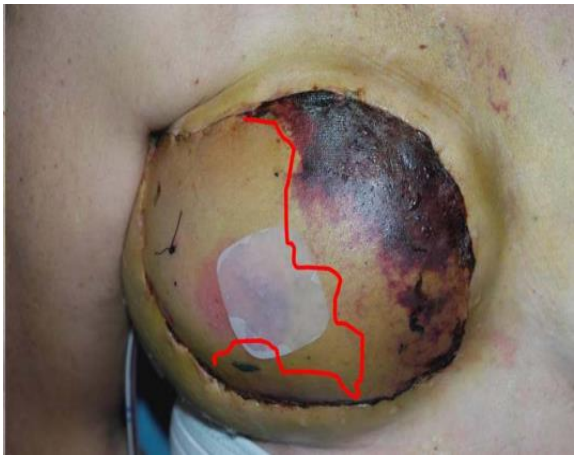

Figure 2:- Theflap24hoursaftertheapplicationofnitro-glycerine plaster.

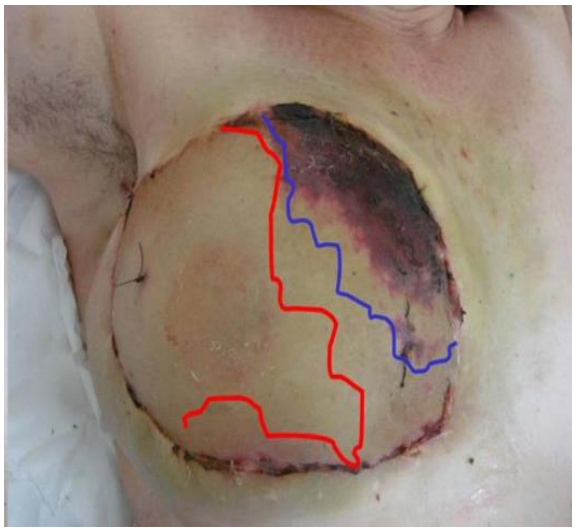

Figure 3:- Thereductionofthesufferingarea4daysafterthe applicationof the plaster.

Figure 4:- Reductionofthesufferingarea5daysaftertheapplicationof the plaster.

Figure 5:- Thereductionofthesufferingarea6daysafterthe applicationof the plaster.

Figure 6:- Theoutcomeafter2weeks.

Conclusion:-

The documented failure rate for free flap procedures varies from 4% to 10%, despite the broad diversity of anticoagulation regimes, research on prophylactic anticoagulation medication, and nearly flawless reconstructive techniques utilised by microsurgeons. Free flap distress or failure is a problem that frequently necessitates surgical re-exploration in order to eliminate hematoma, seroma over the pedicle, or to execute a new anastomosis following a quick detection of the clinical feature of the flap [2].

Sometimes a transitory issue (spasm) that could not necessitate a surgical revision of the anastomosis is what is causing the venous congestion of the flap. In order to relieve the venous congestion of a free DIEP flap, the authors discuss their experience using a nitroglycerine plaster placed to the flap. It started on the fifth day following surgery. It is commonly known that medications produced from nitro can be used to treat angina pectoris. The nitrates led the venous compartment to enlarge, followed by the arterial compartment, which included the coronary arteries. In cardiological clinical practise, organic nitrates like nitroglycerine are the most commonly used medications. Most commonly, nitroglycerin is administered as a plaster that absorbs through the skin. Organic nitrates' mode of action is widely understood.

These influence the endothelium layer, causing it to produce NO (nitric oxide). Endothelial cells, white blood cells, muscle cells, and brain cells all naturally create this gas, which causes vasodilation and decreases platelet aggregation. The release of NO from endothelial cells (caused by nitroglycerin) raises the amount of GMPc within the smooth muscle cells of the arteries, and the relaxing of the smooth muscle cells ultimately results in vasodilation of the capillaries.

The researchers share their experiences; it is implied that at this time, the surgeon is still determining whether a repeat examination of the flap or the anastomotic site is necessary. It is recommended that a nitroglycerin patch can be applied to the injured flap without causing any local or systemic side effects. The surgical exploration could be avoided if the clinical characteristic of the flap improves quickly.

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