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AN ANALYTICAL STUDY OF THE MORBIDITY PATTERN FOLLOWING ILIOINGUINAL BLOCK DISSECTIONS AND THE IMPACT OF MYOCUTANEOUS FLAP COVER IN REDUCING COMPLICATIONS.

Oncology

Dr.Syed Afroze Hussain* M.S.,M.ch Assistant Professor,Department of Surgical oncology,Goverment Royapettah Hospital,Kilapuk medical college ,chennai.*Corresponding Author

Prof. Subbiah Shanmugam M.S.,M.ch, Professor and Head of department .,Goverment Royapettah Hospital ,Kilpauk medical college,Chennai.

Dr. X. Gerald Anand Raja Resident in Surgical oncology,Goverment Royapettah hospital,Kilapuk medical college, Chennai.

ABSTRACT

AIM:

1. To study the various morbidities associated with inguinal, ilioinguinal block dissection
2. To compare the standard tensor lata flap with modified random TFL flap.
3. To compare the outcome between primary closure and the two methods of TFL flap design in reducing wound morbidity.

MATERIALS AND METHODS: A total of 98 dissections including inguinal, Ilioinguinal block dissections were done in 57 patients,28 of them males rest females.The medical records of the patients were reviewedprospectively, data collected and analysed.

CONCLUSION: Ilioinguinal block dissections are associated with significant morbidity.Wound breakdown and necrosis is the worst of all its complications. Tensor fascia lata flap are recommended to prevent wound necrosis the study proves the above hypothesis when the standard form of the flap is used for reconstruction. The modified form is easier to apply and may cover a larger area but the medial part of the flap has a precarious supply and prone for necrosis. We recommend a flap delay when the modification is planned.

KEYWORDS

INTRODUCTION:

Presence of metastatic node in the inguinal or iliac group of lymph nodes is an important prognostic factor in predicting loco regional recurrence, survival and the need for multimodality management for most malignancies involving genital region, lower limb, and skin over the anterior abdominal wall below the umbilicus.

Ilioinguinal block dissection includes removal of all the nodes in the superficial inguinal,deep inguinal and iliac nodes below the bifurcation of common iliac artery.It is curative if only inguinal are involved and presence of iliac nodes indicate the need for multimodality therapy.

Compared to other regional lymphadenectomies Ilioinguinal block dissection is associated with significant morbidity related to wound and lower limb.Hence it is imperative to weigh the risks associated with lymphadenectomy against jeopardizing possible cure or appropriate staging.This study analyses the various morbidities associated with Ilioinguinal block dissections and the results of local flap cover in reducing their incidence.

AIM OF STUDY:

1. To study the various morbidities associated with inguinal, ilioinguinal block dissection
2. To compare the standard tensor lata flap with modified random TFL flap.
3. To compare the outcome between primary closure and the two methods of TFL flap design in reducing wound morbidity.

MATERIALS AND METHODS:

A total of 98 dissections including inguinal, Ilioinguinal block dissections were done in 57 patients,28 of them males rest females.

SURGICAL PROCEDURE:

INCISIONS:

1. Single vertical lazy S shaped incision with curved borders most commonly used to facilitate pelvic node dissections
2. Two incisions without cutting groin crease used in some patients.One 3 -4 cm inferior and parallel to inguinal ligament of 8-10 cms in length over the medial aspect of thigh used for inguinal dissection.Separate oblique incision over iliac fossa for pelvic dissections.

PROCEDURE:

INGUINAL DISSECTION:

The skin flaps raised superiorly and inferiorly at the junction of superficial campers fascia and membranous scarpas fascia onto the external oblique aponeurosis.The fatty lymph packets elevated off the external oblique fascia to the inferior border of the inguinal ligament.The medial border of adductor longus and lateral border of sartorius muscle defined.The fascia lata incised over the muscles and the inferior limit of dissection at the apex is at the apex of apex of femoral triangle.The femoral sheath stripped both superiorly and inferiorly and the node lying between the vessels removed ,dissection completed removing all superficial and deep lymphatics.The saphenous vein ligated below the apex of femoral triangle and flush with saphenofemoral junction.

PELVIC LYMPHADENECTOMY:

The external oblique was incised above the groin and the deeper muscles were split to enter the retro peritoneal region. The ureter was identified and the nodes below the bifurcation of the common iliac vessels medial to the genitofemoral nerve were removed till the deep plane of the obturator nerve. This dissection was joined with the proximal limit of deep inguinal dissection. The femoral ring was closed with polypropelene suture to prevent herniation.

Two types of flaps were used for the cover

1) Standard TFL musculocutneous flap
2) Modified random TFL musculocutaneous flap

Methods commonly employed to prevent complications:

1. Skin flaps were elevated with campers fascia
2. Edges were trimmed to check the bleeding
3. Skin was approximated with edges everted
4. Tight skin closure was avoided
5. Pre operative antibiotics were given and continued post operatively
6. Sterile dressings were done and wound care given
7. Patient was nursed with hip and knees flexed to avoid tension over the flap region
8. Drain site was cleaned regularly and povidone iodine applied
9. Seroma was aspirated
10. Thrombo prophylaxis started in bedridden patients

All the patients were nursed with the knee and the hip flexed to relax the skin over the groin. Active limb movements were encouraged as

soon as possible the patients were mobilized as soon as the wound showed signs of healing.

Minor wound necrosis:
A minor wound necrosis was taken as a wound, which had a superficial wound breakdown, healed within 30 days and did not need additional measures for skin cover

Major wound necrosis:
A major wound necrosis was taken as a deeper loss of skin, with or without infection and took more than 30 days for healing.

Thus a major wound necrosis delays adjuvant therapy by more than the recommended 6-8 weeks

Lymph edema
Clinical classification as described by Brunner:

Grade 1: edema pits on pressure and swelling largely or completely disappears on elevation and bed rest

Grade 2: edema does not pit and does not significantly reduce upon elevation

Grade 3: edema associated with irreversible skin changes
Wound related complications:

Table 1: Primary closure wound details:

S.no	Index	Primarily healed	Minor wound	Major wound
1	Number of wounds	17(30.36%)	12(21.43%)	26(46.42%)
2	Average days of wound healing	12	25	96

Table 2: Standard Tensor Fascia Lata flap cover:

S.no	Index	Primarily healed	Minor wound	Major wound
1	Number of wounds	17(81%)	2(9.5%)	0(0%)
2	Average days of wound healing	15	27	nil

Table 3:Modified random Tensor Fascia Lata Flap:

S.no	Index	Primarily healed	Minor wound	Major wound
1	Number of wounds	9(42.9%)	7(33.3%)	4(19%)
2	Average days of wound healing	17	28	110

Table 4: Bilateral dissections with combination of wound closure:

S.no	Type of closure	Bilaterally healed	Dehiscence in primary	Dehiscence in std TFL	Dehiscence in extended TFL	Delay in adjuvant therapy	Total
1	Primary with std TFL	1	5	1*	-	5	7
2	Primary with modified TFL	1	1	-	1*	1	3
3	Standard TFL with modified TFL	1	-	-	1*	-	2

(*=minor wound necrosis)

OBSERVATIONS AND ANALYSIS
WOUND RELATED COMPLICATIONS

PRIMARY CLOSURE:
Primary closure had a high rate of wound related complications. Major wound dehiscence was associated with infection which further complicated wound healing. Of the 56 dissections primarily closed, only 17(30.36%) healed without complications.

Twelve wounds developed minor wound dehiscence (21.4%). In the remaining 27 dissections, one patient died and the remaining 26 wounds had major wound dehiscence for which the average healing period was 95.5 days. Hence adjuvant radiotherapy was delayed in the above 26 dissections performed

STANDARD TENSOR FASCIA LATA FLAP:
The standard tensor fascia lata flap had the best outcome with only one wound related complication that was minor in nature. This wound healed within 30 days with regular wound dressing. An additional grafting or flap cover was not required.

MODIFIED RANDOM TENSOR FASCIA LATA FLAP:
In the wounds which had a modified version of a tensor fascia lata flap 4 (19%) had major wound dehiscence which healed with average duration of 110 days and they required additional methods like split skin grafting for healing Seven of them (33.3%) had minor wound dehiscence. The site of minor wound dehiscence when these flaps were applied was in the medial margin and commonly in the lowermost distal part. Nine of the wounds (42.9%) healed without any complications.

BILATERAL DISSECTIONS WITH A COMBINATION OF WOUND CLOSURE:
In patients who had a bilateral dissection, the advantage of using a tensor fascia lata flap was not achieved when the contralateral side was closed primarily. Of the 10 patients who had a combination of tensor fascia lata flap and primary closure, only 2 patients healed primarily and received adjuvant therapy without delay.

Six patients (60%) developed major wound dehiscence in the wounds primarily closed. The remaining 2 patients (20%) had minor wound complications in the tensor fascia lata flaps. One of the wound had a standard tensor fascia lata flap and the other a modified tensor fascia lata flap The wounds of these patients healed with secondary intention within 30 days. There was no delay attributable to tensor fascia lata flap in the above two patients receiving adjuvant radiotherapy.

Two patients were closed with a combination of extended tensor fascia lata and a standard tensor fascia lata. Only minor necrosis was seen and the wounds healed without major complications and there was no delay in starting adjuvant therapy.

OTHER COMPLICATIONS
SEROMA
Seventeen of the patients presented with seroma for repeated aspiration that ranged from 20-45 days. The figure could have been higher because some of the wounds were dehisced. Continuous discharge from these wounds needed regular change of dressings.

VASCULAR COMPLICATIONS
None of the operated patients developed vascular blowouts. This could have been a major problem in the study looking into the fact that most of the wounds primarily closed had major wound infections. The regular use of Sartorius to cover the femoral vessels avoided this catastrophic event.

One patient developed compartment syndrome after the standard TFL flap was used to cover the wound. Another developed deep vein thrombosis.

LYMPHEDEMA
The most distressing long term complication noted was lymphedema varying grades of lymphedema was noted in 35/57 (61.4%) patients. Only one patient presenting on long term follow up had grade III lymphedema. The progress of this patient was complicated with associated cellulitis. She had to be admitted for management on two occasions for treatment with antibiotics and supportive care. Grade I lymphedema was seen in 21/57 (36.8%) patients. Grade II lymphedema was noted in 13/57 (22.8%) patients. They were advised manual lymphatic drainage and compression stockings.

DEATH
Two deaths were recorded in the present analysis. Both the deaths were

due to vascular complications. One patient died in the seventh postoperative day due to deep venous thrombosis and associated pulmonary embolism. The other patient developed a compartment syndrome in the leg in the third postoperative day. This complication was noted in the lower limb in which a standard type of tensor fascia lata was raised and the resultant defect was primarily closed.Postoperatively compartment was opened up and decompressed with standard medical care. The postoperative period of this patient was associated with renal failure and septicemia, which later culminated in Multi Organ Dysfunction Syndrome. This patient died in the twelfth postoperative day.

DISCUSSION OF THE RESULTS:

The wounds which have been primarily closed were associated with most of the wound disruptions. Around 46% of the wounds primarily closed had a major wound breakdown. The average duration of wound healing was around 95.5 days (50-156 days) in the patients who had a major wound necrosis. In contrast minor wound related complication was seen in around 21% of the wounds. The average duration of wound healing in minor wounds was around 24 days (21-28). only around 30% of wounds healed primarily when closed without a flap cover.

In the study, the standard tensor fasica lata flap healed without any major wound related complications. When all the wound were compared the standard tensor fasica lata flap had the best outcome. Only two patients had minor wound complications and they healed within 30 days. The modified tensor fascia lata flap had minor.complications. The wound in these flaps necrosed predictably in the lower and the outer most part of the flap.

An important observation made when bilateral dissections are performed and wounds closed by using different types of flaps (primary, standard and modified tensor fascia lata) was the advantage gained by one wound healing was lost when the other wound dehisced. The advantage of a healed wound is starting adjuvant radiotherapy at the earliest for highest chance of cure. Six out of the 12 such operated patients had a delay in starting adjuvant therapy. In all the six patients the wound closed primarily was the cause of major wound necrosis. Thus the benefit of using a flap not seen when combined with primary closure on the contralateral side.

The morbidity of inguinal lymphadenectomy was analysed by Ravi et al. These included wound infection in 18%,skin necrosis in 61%, seroma in 5%,lymphedema in 25%.The routine use of myocutaneous flap resulted in 100%primary wound healing and reduced the post operative stay by a mean of 10 days. Andrew spillene et al reported 14% incidence of lymphedema in their study of ilioinguinal dissections.

CONCLUSION:

Ilioinguinal block dissections are associated with significant morbidity.Wound breakdown and necrosis is the worst of all its complications. Tensor fascia lata flap are recommended to prevent wound necrosis the study proves the above hypothesis when the standard form of the flap is used for reconstruction. The modified form is easier to apply and may cover a larger area but the medial part of the flap has a precarious supply and prone for necrosis. We recommend a flap delay when the modification is planned.

REFERENCES

1. Song TG,ChenGZ ,Song Yl .Thee free thigh flap.A new free flap concept based on the septocuatenous artery,Br J Plastic Surg 1984:37;149-59.
2. Tensor Fascia lata myocutaneous flap reconstruction following ilioinguinal node dissection DN. Savant ,A V dalal .European Journal of plastic surgery ;Volume 19 ,Number 4 ,174-177.
3. Kroon BK ,Horenblas S,Meinhardt W et al ,Dynamic sentinel node biopsy in penile cancer ,Evaluation of !0 year experience .Eur Urol 2005;47;601.
4. The vascular Anatomy of tensor fascia lata musculocutaneous flap :Annals of plastic surgery ;july 1978-volume 1 issue 4
5. Ravi R., Morbidity following Groin Dissection for penile carcinoma .British journal of urology ,72;941-945
6. Dassler et al radical excision of the inguinal and ilaic lymphnodes -surg gynaecol obstet 1984;679-694
7. Sotelo R,Sanchez R,Clavijo Endoscopic inguinal lymphnode dissection for penile carcinoam ;world j Urol 2009;27
8. BenoitL,Boichot c,Cheynel N et al, preventng lymphedema and morbidity with an omental flap after ilioinguinal lymphnode dissection Ann surg Oncol 2005
9. Rouzier R,Haddad B,et al ,inguino femoral disection for carcinoma of the vulva effect of modification of the extent and techniue on morbidity and survival
10. Omenlaas AA,seixas AL De Moraes JR et al.Analysis of lymphadenectomies in patients with penile carcinoma J urol 1991 ;141 ;330,332