MASSIVE PRE-PATELLAR BURSITIS – A CASE REPORT

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ABSTRACT:

Pre-patellar bursitis is one of the common bursitis among all bursa affection. But massive Pre-patellar bursa is seen in patients who have repeated trauma to knee for long duration like patients ambulating on knees in post polio residual paralysis or cerebral diplegia and very few cases have been reported. Hence we report a case of 25 yr male patient with post polio residual paralysis presented who presented with massive pre-patellar bursitis. Bursa was excised along with the redundant skin leaving the anterior wall intact & scarification was done.

Keywords: *post polio residual paralysis, massive pre-patellar bursitis, scarification*

INTRODUCTION

Pre-patellar bursitis is one of the common bursitis among all bursa affection. Pre-patellar bursitis is seen among workers whose job requires frequent kneeling or crawling. Massive Pre-patellar bursa is seen in patients who have repeated trauma to knee for long duration like ambulating on knees. We could find very few cases similar to our case with massive pre patellar bursitis in literature, hence we report this case.

CASE REPORT

25 yr male patient presented with swelling & pain in the right knee since 4 months. He was a case of post polio residual paralyais & had crawling as a means of household ambulation. Patient was obese & had scoliosis with convexity to right side. He was ambulatory on his knees. Swelling measured 20x10x8cm over anterior aspect of right knee, with smooth surface (Fig.1a). Skin over the swelling was stretched, shiny & pinchable. Swelling was soft in consistency; fluctuation & trans-illumination were present. Patella could not be palpated. He had fixed flexion deformity of 50^0.

Range of movements was as shown in Table 1.

Table: 1

Joint	Movements	Right	Left
Hip	Flexion	0-140	0-140
	Extension	0-20	0-20
	Adduction	0-20	0-20
	Abduction	0-60	0-80
	Internal rotation	0-80	0-80
	External rotation	0-90	0-90
Joint	Movements	Right	Left
Knee	Flexion	50-90	50-130
	Extension	Absent	Absent
Ankle	Dorsi flexion	0-40	0-40
	Plantar flexion	0-20	0-20

His blood investigations revealed haemoglobin percentage of 11gm%, total count of 5200cells/mm^3, ESR was within normal limits. X ray showed a large soft tissue swelling anterior to right knee (Fig.1a &1b).


Fig 1.a


Fig 1.b

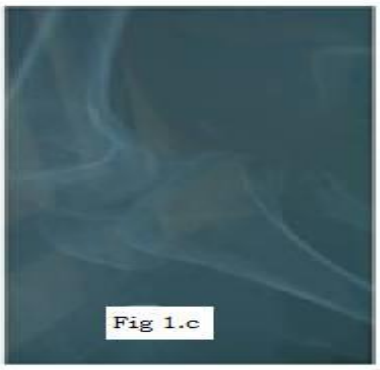
Fig 1.c

Excision was planned. Initially aspiration of the bursal fluid was done (Fig.2a), which was dark brown in color. Transverse incision was taken (Fig.2b). Bursal wall was thickened, inflamed, with many loculations in the cavity (Fig.2c). The bursal posterior wall was excised, keeping anterior wall intact & scarification was done. Redundant skin was excised. Wound was closed after keeping knee in maximum flexion possible (Fig.2d).

Cytology result was as given in Table 2.

Table: 2

Volume	3ml
Color	Brownish
Appearance	Turbid
Cell count	780
Cell type	Polymorphs-90%
	Lymphocytes-10%
	Mesothelial cells-0%
	Macrophages-0%
Cholesterol	265mg/dl
Lactate	98.6mg/dl
Glucose	41
Proteins	6
Crystals	Negative

Histopathology report was as follows: Gross appearance had grey white tissue with solid cystic areas. Microscopy showed fibro collagenous tissue with flattened indistinct epithelium, dense fibrillary collagen with areas of hyalinization, thin congested blood vessels & peri-vascular infiltration (Fig. 2e). No granuloma seen. Benign synovial lined cystic lesion consistent with bursa with chronic inflammation & fibrosis (organized chronic inflammation). Grams stain showed no organisms & culture & sensitivity yielded no growth. Sutures were removed on 14th day and patient was discharged. Knee supporting cushion pads were advised for him. We lost the follow-up of the patient after his discharge.

DISCUSSION

Bursae are sacs lined with a membrane similar to synovium; they usually are located around joints or where skin, tendon, or muscle moves over a bony prominence & they may or may not communicate with a joint. Their function is to reduce friction & to protect delicate structures from pressure.

Treatment is determined primarily by the cause of the bursitis & only secondarily by the pathological change in the bursa. Surgery is not required in most instances. Systemic causes, such as gout or syphilis & local trauma or irritants should be eliminated & when necessary, the patient's occupation or posture should be changed. One or more of the following local measures usually are helpful: rest, moist heat, elevation, protective padding & if necessary, immobilization of the affected part.

Surgical procedures useful in treating bursitis are (1) aspiration & injection of an appropriate drug, (2) incision & drainage when an acute suppurative bursitis fails to respond to

nonsurgical treatment, (3) excision of chronically infected & thickened bursae & (4) removal of an underlying bony prominence.[1]

Traumatic Pre-patellar bursitis is caused by an acute injury, such as a fall directly on the patella, or by recurrent minor injuries, such as those that produce "housemaid's knee." Either type usually responds to conservative treatment. If fibrosis or synovial thickening with painful nodules fails to respond to such treatment, however, excision of the bursa is indicated.[1] According to Dye et al. three Pre-patellar spaces that can be termed bursae are: subcutaneous, subfascial & subaponeurotic, with the former two being the mostconsistent.[2]

On Examination it presents as a fluid-filled mass anterior to the patella. When it becomes infected it causes pain, tenderness, fever & elevated white blood cell count. Most important differential diagnosis is septic arthritis, which is usually associated with an effusion. When in doubt, a carefully performed arthrocentesis can be done.

Most cases are mild & become quiescent with conservative treatment. The effusion subsides, leaving the Pre-patellar area only slightly tender. Bandaging, with avoidance of further trauma is usually successful. Further unavoidable trauma, as in miners, farmers & over-conscientious housewives, results in a progressive enlargement of the bursa, which becomes even more vulnerable to injury. Surgical intervention may be required for recalcitrant bursitis.[4]

Excision of the bursa is effective in relieving symptoms. Such patients require operation & total excision of the bursa is often carried out. The dissection itself is not always simple because the thick anterior wall of the inflamed bursa is adherent to the overlying skin, whose structure is damaged by the operation. Not uncommonly the final outcome is an unpleasantly sensitive knee, with thin, atrophic skin adherent to the underlying patella; kneeling is then impossible. Postoperative interstitial & subcutaneous haematoma is not between the patella & the posterior wall of the bursa is comparatively easy & much less traumatic. If only the posterior wall of the bursa is removed, thereby leaving the anterior wall with its overlying skin undisturbed, the knee would be protected by healthy, undamaged, supported skin & the chronic bursitis also cured.[3]

LITERATURE REVIEW

We found case studies similar to our study. A case report of 41-year-old male with cerebral palsy with spastic diplegia presented with enlarging mass on the anterior aspect of his right knee since 2 months. Excision of the mass was performed. The bursa was exposed through a transverse incision. Extensive necrotic tissue was found at the centre. The bursa was excised in its entirety. Redundant skin was excised with the knee in full flexion & the skin edges were re-approximated. Intra-operative cultures grew few staphylococcus coagulase-negative species, rare lactobacillus species & rare pseudomonas species.[5]

Another case report describes a 36-year-old African American male with cerebral palsy & bilateral slowly enlarging knee masses. He had 90 degrees fixed flexion knee contractures bilaterally. As the result of a protective response, the bursa provides a cushion for the underlying bone prominences of the tibial tubercle & patella. This compensatory mechanism has allowed the patient to have functional, painless household ambulation.[6]

Another case report was of 56 yr old male with pre-patellar bursitis of size 30x15x15cm. Wide resection was made, the fluid was chocolate coloured. Cellular amorphous material & hemosiderin macrophages with few inflammatory cells were seen in cytology.[7]

Massive pre patellar bursitis can occur in patient with repeated minor injuries to the knee like in patients of Post-polio residual paralysis or cerebral diplegia who have crawling as means of household ambulation. The reported cases are few. Surgical excision is done when patient has pain, infection or when it prevents patient's ambulation due to enlargement of bursa. Keeping the anterior wall intact in surgery prevents post-operative knee pain.

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