

ORIGINAL ARTICLE

Treating Gynecomastia with Ultrasound-guided Vacuum-assisted Biopsy Device as a Cosmetic Method

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Purpose: Gynecomastia can cause severe emotional phobia for breast cancer in elderly male and physical distress in young men. To select the appropriate cosmetic surgical approach for gynecomastia, I evaluated the usefulness of performing ultrasound-guided vacuum-assisted device excision of it. **Methods:** Twenty-two cases of gynecomastia in 18 male were treated by vacuum-assisted biopsy device excision from November 2005 to June 2007. Their age range was 14-72 years old (mean, 34). The vacuum-assisted biopsy device excision was performed by 11G needle in 7 cases and 8G needle in 15 cases. I checked the number of extracted tissue pieces, the duration time of the procedure, immediate complications, and breast ultrasound after 3 months. **Results:** The mean number of extracted tissue pieces was 69, and the average procedure duration was 25

minutes. There were no significant immediate complications such as bleedings and skin necrosis, and there were no clinically serious complications on 3 months follow-up examinations. During operation under local anesthesia, all patients tolerated the procedure. After vacuum-assisted biopsy device procedure, the cosmetic results were good to excellent for all the patients. **Conclusion:** Vacuum-assisted biopsy device excision was an effective surgical option, especially for small and glandular gynecomastia. I suggest this is a useful alternative procedure to surgery and liposuction, or it could be used effectively as a co-operative procedure with liposuction.

Key Words: Cancer phobia, Cosmetic method, Gynecomastia, Vacuum-assisted biopsy device

INTRODUCTION

Gynecomastia is a benign clinical condition which is unilateral or bilateral enlargement of the male breast due to hormonal imbalance at the breast tissue.⁽¹⁾ The incidence of this common condition varies 30% to 50% of normal male,⁽²⁾ but sometimes it causes significant psychological and physical stress in young male and it brings phobia of malignancy in elderly male. The causes are so complex and various including idiopathic, obesity, consumption of estrogens, anabolic steroids, cancer, drugs, and supplements.⁽³⁾ The treatment depends on the causes

and may vary from observation, withdrawal of drugs, to correction of underlying conditions with surgical excision. The surgical removal is the best option for long-standing gynecomastia or glandular hypertrophied male breast that is failed to non-surgical therapy.⁽⁴⁾ The surgical procedures for gynecomastia include conventional surgical excision (subcutaneous mastectomy), liposuction through a periareolar incision, and vacuum-assisted biopsy device excision as a new trial. As one of appropriate cosmetic surgical approaches for gynecomastia, I chose vacuum-assisted biopsy device excision technique for simultaneous removal of glandular and fatty tissues through a single 2-3 mm sized incision. I evaluated the usefulness and safety of the vacuum-assisted biopsy device excision for treating gynecomastia.

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METHODS

Twenty-two cases of gynecomastia in 18 male who did

not have severe underlying causes had been treated by vacuum-assisted biopsy device excision from November 2005 to June 2007 at Chungmu General Hospital, Cheonan, Korea. Their ages was between 14 and 72 (mean age, 34 yr). Patients under psychological and physical distress with gynecomastia were chose for treating. During this period, vacuum-assisted biopsy device excision for breast mass was performed in about 700 times at the hospital. To more readily categorize the degree of deformity and possibility of vacuum-assisted biopsy device excision in each patient, Simon's classification was used. I tried vacuum-assisted biopsy device excision in patient with Simon's grade 1 and 2A.(5) The choice of probe scale (11G or 8G) was depended on size of breast and experience of operator.(6) At the initial trial, both 11G and 8G probe were used, but later period 8G probe was used only. The procedure was performed by a fully accredited surgeon under local anesthesia. The postoperative follow-up period was performed after 3 months. Surgical procedures were described below: First, in supine position with raising both hands on head, the whole resection range was marked with ultrasound guide. Second, one small incision (2–3 mm) at the lateral side of nipple after local anesthesia on skin was made for removing patient's hypertrophied glandular and fatty tissue. Then, the marked resection range was removed with guidance of ultrasound using vacuum-assisted biopsy device. After completion of vacuum-assisted biopsy device excision, the incision site was sutured or taped by surgical strip. The patients were instructed to wear a vest compression garment for 2 days. Oral antibiotics and pain medications were given for 3 days after procedure. Patient satisfaction score was checked after procedure in all patient, the definition of satisfaction score was not satisfied (less 5), satisfied (5–8), very satisfied (more than 8).(7)

RESULTS

The average lesion size checked by preoperative ultrasound was 3.5×2.0 cm in vacuum-assisted biopsy device, while 7.0×5.6 cm in subcutaneous mastectomy. The duration of vacuum-assisted biopsy device procedure

Table 1. Results of ultrasound-guided vacuum-assisted device excision

Patient	Age (yr)	Probe (G)	Side	Size (pieces)	Time (min)
1	14	11	R	114	31
			L	107	37
2	19	11	R	126	39
			L	92	26
3	28	11	R	20	15
4	36	8	R	17	10
5	47	8	L	30	16
6	55	8	L	12	10
7	23	8	R	68	30
8	23	8	L	110	42
9	46	8	L	30	20
10	72	8	R	30	15
11	18	8	R	60	25
			L	155	35
12	45	8	R	16	10
13	21	8	R	83	30
14	21	8	R	110	55
15	31	11	L	17	10
16	23	11	L	12	11
17	72	8	R	26	10
18	19	8	R	70	20
			L	160	45

R=right; L=left.

was from 10 min to 55 min (average, 25). The numbers of removed tissue pieces were 12 to 160 (average, 69) (Table 1). There were no significant early and late (3 months follow-up) complications such as open operation for bleeding control, re-operation for remaining of glandular tissue of breast, and sensation change of nipple. All patients were satisfied (scores of 8) or very satisfied (scores of 9 or 10). In comparing the subcutaneous mastectomy results underwent during same period, the vacuum-assisted biopsy device procedure showed acceptable result as one of surgical methods for gynecomastia.

DISCUSSION

Gynecomastia is the development of enlarged male breast. These may be quiet small (only a few cubic centimeters in volume) but located right at the nipple-areolar complex, causing a pointed protrusion, although they can be massive subcutaneous fat and glandular tissues.(8) Regardless of size, gynecomastia with accompanying pain may sometimes causes significant physical and psycho-



Figure 1. Post operative scars, Subcutaneous mastectomy vs. vacuum-assisted device excision/subcutaneous mastectomy. Post operative scars, Subcutaneous mastectomy vs. vacuum-assisted device excision/vacuum-assisted device excision of right gynecomastia.

logical problem. In young men, physical feminization is needed to correct cosmetically. Correction of this condition is changing a physical appearance normally found in women from men. In old men, pain and phobia for cancer need to confirm tissue diagnosis.⁽⁹⁾ It is not only fixing a physical problem but also making a profound impact on the patient's mind.⁽¹⁾ Traditionally, surgery such as subcutaneous mastectomy has been the treatment of choice for gynecomastia but cosmetically unsatisfactory results are reported to occur in as much as 50% of all patients,⁽¹⁰⁾ so recently there has been an increase in use of minimally invasive techniques such as vacuum-assisted biopsy device, laser therapy, radio-frequency ablation, cryotherapy, focused ultrasound waves and liposuction.^(11,12)

Vacuum-assisted biopsy device excision is one of convenient and effective method to small gynecomastia patients for whom might be stressed with post operative anterior chest wall scar after conventional subcutaneous mastectomy (Figure 1). The vacuum-assisted biopsy device excision method is more easy and convenient than liposuction and surgery because of no need for general anesthesia and admission. It is performed under ultrasound guide with local anesthesia, and it is possible to check the remained tissue during procedure.⁽¹³⁾ The extend of procedure depends on both the amount of breast tissue to be removed and the degree of skin redundancy. With recent advancement of vacuum-assisted biopsy device

technology, newly developed probe (EX type) can make possible to remove larger gynecomastia with shortening of duration time.

CONCLUSION

Despite a limitation of vacuum-assisted biopsy device application for relatively small gynecomastia, the vacuum-assisted biopsy device excision may be one of useful and safe methods for correction of gynecomastia.

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