

### Muscular rheumatism following breast surgery in Denmark

Sirs,

Epidemiological studies, reviews and meta-analyses have not confirmed an association between silicone gel-filled implants and connective tissue disease (CTD) (1-7), but an association has been hypothesized between silicone implants and a new disorder, best characterized as an atypical CTD (8). The symptomatology of the proposed new disease shares common features with other musculoskeletal conditions, in particular fibromyalgia (9).

In a previous study we identified a cohort of women who had undergone cosmetic breast implant surgery at public hospitals in Denmark and a comparison cohort of women who underwent breast reduction surgery (10). Women in the two cohorts were followed for hospitalization for definite (classical) CTD and more ill-defined rheumatic diseases. No excess hospitalization was observed for definite CTD among women with implants as compared with the general female population. However, a clearly increased hospitalization rate was observed for a group of relatively ill-defined rheumatic conditions, which included fibromyalgia and were termed "muscular rheumatism" (O/E ratio = 2.5; 95% CI = 1.7-3.6; n = 29). Interestingly, this finding was echoed by a similar excess of hospitalization for muscular rheumatism among women who underwent breast reduction surgery (O/E ratio = 1.9; 95% CI = 1.6-2.3; n = 127) (10). Data from the National Registry of Patients (NRP) provide little or no information on the signs and symptoms leading to hospitalization. Thus, it was not feasible on the basis of registry data to investigate the existence of a unique symptomatology underlying the hospitalization for muscular rheumatism among women with breast implants. In order to address this shortcoming we requested the medical records of all women hospitalized during the study period for muscular rheumatism subsequent to

breast implant or breast reduction surgery. To further assess this issue, an additional comparison group was established composed of women hospitalized for muscular rheumatism with no record of prior breast surgery.

The purpose of our study was to describe the diagnosis of muscular rheumatism in women following cosmetic breast surgery and to determine whether a unique pattern of symptoms was present among patients with implants. Secondary objectives were to compare the hospitalization rates of these patients, and of patients with muscular rheumatism who had not undergone breast surgery, with that of the Danish female population; and to compare the frequency of other surgical interventions in the groups that had and had not undergone breast surgery.

The study groups comprised women hospitalized for muscular rheumatism who had previously undergone silicone breast implant surgery (n = 29), breast reduction surgery (n = 127) or no breast surgery (n = 174). Medical records were retrieved and validated for 259 patients. The diagnosis "muscular rheumatism" was based primarily on localized soft tissue complaints (Table I). No statistically significant differences in pain profile were found among the 3 study groups. Women in all three groups were hospitalized more frequently than women in the general population (breast implantation, total hospitalization: O/E ratio = 2.4; 95% CI = 2.2-2.8; breast reduction, total hospitalization: O/E ratio = 2.9; 95% CI = 2.7-3.0; comparison group, total hospitalization: O/E ratio = 1.9, 95% CI = 1.8-2.0) and increased rates of hospitalization were observed both before and after breast surgery. Women with muscular rheumatism who had undergone cosmetic breast surgery had a higher frequency of surgical interventions than women with muscular rheumatism who had not had breast surgery (breast implantation, p = 0.05; breast reduction, p = 0.06). Validation of the diagnosis "muscular rheumatism" did not reveal a pattern of symptoms suggestive of atypical connective tissue disease (CTD) in women with silicone

breast implants. The group exposed to silicone did not differ from the other two groups with regard to their pain profile or the prevalence of fibromyalgia. The excess of hospitalizations in all 3 study groups and of surgical intervention in the groups that had undergone breast surgery may reflect a general change in the behavior of these women towards illness.

B. JENSEN<sup>1,2</sup>, MD, PhD student

K. KJØLLER<sup>2</sup>, MD

J.K. MC LAUGHLIN<sup>3</sup>, MD, PhD

B. DANNESKJOLD-SAMSØE<sup>1</sup>, MD, DMSc

H. BLIDDAL<sup>1</sup>, MD, DMSc, Professor

W.J. BLOT<sup>3</sup>, MD, PhD

J.H. OLSEN<sup>2</sup>, MD, DMSc

<sup>1</sup>Parker Institute, Muscle Laboratory, Frederiksberg Hospital, Frederiksberg, Denmark; <sup>2</sup>Danish Cancer Society, Division for Cancer Epidemiology, Copenhagen, Denmark; <sup>3</sup>International Epidemiology Institute, Rockville, Maryland, USA  
Address correspondence and reprint requests to: Bente Jensen, Parker Institute, Muscle Laboratory, Department of Rheumatology, Frederiksberg Hospital, Ndr. Fasanvej 57, 2000 Frederiksberg, Copenhagen, Denmark.

### References

- INDEPENDENT ADVISORY COMMITTEE ON SILICONE-GEL-FILLED BREAST IMPLANTS: Summary of the report on silicone-gel-filled breast implants. *Can Med Assoc J* 1992; 147:141-6.
- ANGELL M: Shattuck Lecture. Evaluating the health risks of breast implants: The interplay of medical science, the law, and public opinion. *N Engl J Med* 1996; 334: 1513-8.
- SANCHEZ-GUERRERO J, LIANG MH: Silicone breast implants and connective tissue. No association has been convincingly established. *BMJ* 1994; 309: 822-3.
- NYRÉN O, YIN L, JOSEFSSON S *et al.*: Risk of connective tissue disease and related disorders among women with breast implants: A nation-wide retrospective cohort study in Sweden. *BMJ* 1998; 316: 417-22.
- PERKINS LI, CLARK BD, KLEIN PJ, COOK RR: A meta-analysis of breast implants and connective tissue diseases. *Ann Plast Surg* 1995; 35: 561-70.
- BONDURANT S, ERNSTER V, HERDMAN R (Eds.): *Safety of Silicone Breast Implants*. Wash.DC, National Academy Press 1999.
- SANCHEZ-GUERRERO J, SCHUR PH, SERGENT JS: Silicone breast implants and rheumatic disease. Clinical, immunologic, and epidemiologic studies. *Arthritis Rheum* 1994; 37: 58-68.
- BORENSTEIN D: Siliconosis: A spectrum of illness. *Semin Arthritis Rheum* 1996; 24 (S.1).
- WOLFE F: "Silicone related symptoms" are common in patients with fibromyalgia: No evidence for a new disease. *J Rheumatol* 1999; 26: 1172-5.
- FRIS S, MELLEMKJÆR L, MC LAUGHLIN JK *et al.*: Connective tissue disease and other rheumatic conditions following breast implants in Denmark. *Ann Plast Surg* 1997; 34: 1-8.

**Table I.** Results of validation of medical records during hospitalization for muscular rheumatism, by location of pain.

Location of pain	Comparison group		Breast implantation		Breast reduction			
	%	(n)	%	(n)	p	%	(n)	p
Head, neck, shoulder and upper extremities	26	(33)	20	(5)	0.71	20	(20)	0.4
Thorax	9	(11)	16	(4)	0.44	16	(16)	0.13
Abdomen and pelvis	29	(37)	40	(10)	0.41	27	(26)	0.75
Lumbar & gluteal regions & lower extremities	22	(28)	20	(5)	1.0	26	(25)	0.46
Miscellaneous	14	(17)	4	(1)	0.32	11	(11)	0.77
All medical records retrieved*	100	(126)	100	(25)		100	(98)	

\*Cases of CTD and fibromyalgia excluded.