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Short communication

Will women receive same-type repeat surgeries for treating benign adnexal tumors?—An 11-year nationwide population-based descriptive study in Taiwan

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A B S T R A C T

Objective: Laparoscopy has gained worldwide popularity during the past 2 decades; however, it remains unclear whether repeat surgeries are affected by primary surgeries. Our objectives were to explore whether laparoscopy is the preferred choice for repeat surgeries in managing recurrent adnexal tumors and whether primary surgeries affect the choices.
Materials and methods: Women who were covered by the National Health Insurance, Taiwan, and received repeat surgeries for recurrent adnexal tumors in Taiwan during 1999–2009 were identified.
Results: A total of 135,793 women who received either laparotomy or laparoscopy for benign adnexal tumors were identified. Of them, 6609 women were admitted for repeat surgeries for recurrent adnexal tumors. The rates of using same-type operations (i.e., laparotomy-to-laparotomy or laparoscopy-to-laparoscopy) for repeat surgeries were 50.25% and 79.01% for laparotomy and laparoscopy, respectively ($p < 0.0001$).
Conclusion: The choices of repeat surgeries were different after primary surgeries for recurrent adnexal tumors between the laparoscopy and laparotomy groups.

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Introduction

Benign adnexal tumors are a commonly encountered gynecological condition in women of reproductive age.[1] Surgeries for benign adnexal tumors can be performed using either laparotomy or laparoscopy. Because minimal invasive surgeries have gained popularity worldwide during the past 2 decades,[2,3] the laparoscopic approach is currently considered the preferred treatment option for benign adnexal cysts.[4] Based upon the National Health Insurance (NHI) claims data, we described an increasing trend for choosing laparoscopy in Taiwan, especially among younger patients and surgeons.[4] This study extended our previous observation, and explored whether laparoscopy is the preferred choice for repeat surgeries in managing recurrent adnexal tumors and whether primary surgeries affect the choices.

Materials and methods

The data used in this study were obtained from the National Health Insurance Research Database.[4] The study participants were female patients with a diagnosis of benign adnexal tumors, and had received either laparoscopy or laparotomy as the primary surgeries and their subsequent repeat surgeries in Taiwan between January 1999 and December 2009. We recruited patients that had surgeries for adnexal pathology as the principal procedure. The exclusion criteria were patients receiving concomitant hysterectomy abdominally, vaginally, or by laparoscopy. Reoperations due to subsequent benign adnexal tumors were identified for the statistical analysis of same- and different-type surgeries.

Conflicts of interest: All authors declare that there are no conflicts of interests.

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Table 1
Choice of same- or different-type repeat surgery for benign ovarian tumors among hospitals of different accreditation levels.

	Medical center		Regional		Local		Total	
	Laparotomy ($N = 16,833$)	Laparoscopy ($N = 42,533$)	Laparotomy ($N = 11,889$)	Laparoscopy ($N = 34,905$)	Laparotomy ($N = 11,057$)	Laparoscopy ($N = 18,576$)	Laparotomy ($N = 39,779$)	Laparoscopy ($N = 96,014$)
Reoperation	711	2087	506	1800	580	925	1797	4812
Same type, *n* (%)	375 (52.74)	1628 (78.01)	238 (47.04)	1461 (81.17)	290 (50.00)	713 (77.08)	903 (50.25)	3802 (79.01)
Different type, *n* (%)	336 (47.26)	459 (21.99)	268 (52.96)	339 (18.83)	290 (50.00)	212 (22.92)	894 (49.75)	1010 (20.99)
p	<0.0001		<0.0001		<0.0001		<0.0001	

Results

After the primary surgery in 135,793 women, 6609 of them were admitted for repeat surgeries for recurrent adnexal tumors (Table 1). The rates of using same-type operations (i.e., laparotomy-to-laparotomy or laparoscopy-to-laparoscopy) for repeat surgeries were 50.25% and 79.01% for laparotomy and laparoscopy, respectively ($p < 0.0001$). The results were consistent among hospitals of different accreditation levels, i.e., medical centers, regional hospitals, and local hospitals, suggesting that the choice of laparoscopy was not affected by the types of hospitals.

Discussion

The laparoscopy group had a significantly higher tendency to choose laparoscopy for the repeat surgeries, whereas only half of the laparotomy group chose laparotomy for their repeat surgeries. This reflects the changing trend of minimal invasive surgery during the study period in Taiwan; the choices of repeat surgeries (either laparoscopy or laparotomy) were different after primary surgeries.

Several factors may affect the choice of laparoscopic surgeries. Poncelet et al[5] reported the parameters influencing the choice of laparoscopy, which include abnormal tumor markers, large tumor size, bilateral tumors, and ascites visible on ultrasound. Meanwhile, the setting of medical facilities, surgeons' experience, and patients' preference should also be considered while making the decision regarding which surgical approach to choose.[4] However, factors such as surgeons' preference, patients' preference, risk aversion, and so on, prompting the use of laparoscopy as the surgical approach, cannot really be addressed and explained using a retrospective dataset. Therefore, biases existed in this study, i.e., laparotomy might be preferred due to the preoperative findings suggestive of possible malignancy; the intraoperative conversions from initial laparoscopy into laparotomy were categorized as laparotomy.

In conclusion, our study offered the nationwide population-based descriptive observation that laparoscopy is preferred as a repeat surgery for recurrent benign adnexal tumors in the primary laparoscopic group than in the primary laparotomy group, and the choice is consistent among hospitals of different accreditation levels. However, differentiating benign tumors from malignant adnexal tumors is important for appropriate treatment and avoidance of unnecessary salvage operations in case of ovarian malignancies. Therefore, surgeons need to know how to use available tests to narrow down the differential diagnoses and, in the meantime, recognize the uncertainty involved in the process.[6]

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