Comorbid rectus abdominis diastasis is a risk factor for recurrence of umbilical hernia in Japanese patients

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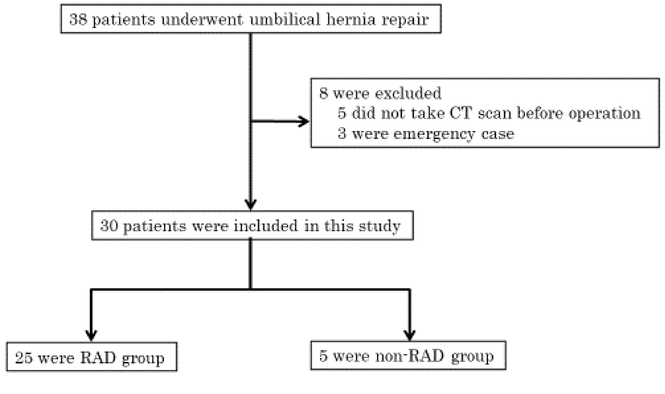
Introduction

Rectus abdominis diastasis (RAD) is characterized by thinning and widening of the linea alba and laxity of ventral abdominal muscle. RAD, when coexistent with umbilical hernia, is considered a risk factor for hernia recurrence.
We aimed to investigate the impact of comorbid RAD in patients with umbilical hernia who underwent hernia repair.

Methods

Between April 2006 and May 2018, we enrolled 30 patients who underwent umbilical hernia repair using either laparoscopic or anterior approaches.We diagnosed RAD according to preoperative computed tomography.
The outcomes of patients with umbilical hernia, the RAD group, and the non-RAD group were compared, especially in terms of recurrence.

Fig. 1 Trial flow diagram of this study



RAD: Rectus Abdominis Diastasis

Results

Twenty-five of 30 patients (83%) presented with RAD. Three patients (12%) had postoperative recurrence and were allocated to the RAD group. The median body mass index in the RAD group was 27.2 kg/m2. In the RAD group, a prosthesis mesh was used in 12 patients (48%), and nonabsorbable suture material was used in four patients (16%). There was no statistically significant difference between the two groups in terms of age, hernia orifice diameter, the proportion of patients who underwent each selected technique, or duration of surgery.

Table1. Patients demographics (n=30)

	RAD group	non-RAD group
Patients (%)	25/30 (83%)	5/30 (17%)
Sex ratio (F/M)	13/12	1/4
Age (years)	65 (31-88)	61 (38-85)
Body mass indek (kg/m^2)	27.2 (19.9-37.1)	21.8 (17.5-26.5)
Patient comorbidity		
COBD	8	0
DM	10	1
Obesity	15	1
Diameter of hernia orifice (mm)	16.2 (7.1-44)	15.5 (10.1-19.4)
Selected technique (laparoscopy/anterior)	11 / 14	2 / 3
Usage of prosthesis matrial (used / not used)	12 / 13	2 / 3
Used materials to close the defect (not used/absorbable/nonabsorbable)	0 / 21 / 4	0 / 5 / 0
Duration of opration (min)	162.4 (88.1-442.3)	126.5 (62.8-236.4)
Intraoperative complication	0	0
Reoperation due to complication	2	0
Recurrence (%)	3/25 (12%)	0/5 (0%)
Median follow up period (months)	8 (4-28)	

Note: Date are expressed as mediam (min-max)
COPD: Chronic Obstructive Pulmonary Disease
DM: Diabetis Mellitus

Table.2 Demographics of recurrent patients

	Case1	Case2	Case3
Sex	F	F	M
Age (years)	48	83	55
Body mass indek (kg/m^2)	28.6	27.8	24.1
Patient comorbidity			
COPD	+	+	–
DM	+	–	–
Obesity	+	+	+
Dameter of hernia orifice (mm)	11.4	22.3	13
Selected technique	IPOM	SC	IPOM
Defect closure (absorbable/nonabsorbable)	not used	absorbable	not used
Usage of prosthesis material	+	–	+
Mean duration of opration (min)	128	202	118

COPD: Chronic Obstructive Pulmonary Disease
DM: Diabetis Mellitus
IPOM: Intraperitoneal Onlay Mesh
SC: Simple Closure

Conclusion

The rate of comorbid umbilical hernia with RAD in Japanese patients was high, and the recurrence rate of umbilical hernia was also high in this group. We strongly recommend preoperative detection of RAD. We also recommend mesh-based repair of the midline and nonabsorbable suture to decrease the recurrence rate, irrespective of hernia size.