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SDC 2. Table 2: Characteristics of included studies.

References	Imaging before operation	Abdominal X-ray Contrast study of SI	Abdominal CT	MDCT	Abdominal US
Benson 1964	AXR	“distention of two loops of SB with air-fluid levels”	NP	NP	NP
Steele 1973	AXR	“dilated SBL with multiple air-fluid levels”	NP	NP	NP
Fujioka 1976	AXR	NR	NP	NP	NP
Bircher 1981	AXR	“Multiple air fluid levels, dilated SB”	NP	NP	NP
Li 1982	AXR	“Multiple air fluid levels, dilated SBL”	NP	NP	NP
Li 1985	AXR	“Multiple air fluid levels, dilated SBL”	NP	NP	NP
Sugimoto 1985	AXR	“air and fluid levels in SB”	NP	NP	NP
Matsuda 1989	AXR	“distended SB with air-fluid levels”	NP	NP	NP
Mo 1991	AXR	“Multiple, dilated SBL”	NP	NP	NP

Johnson 1992	AXR	“dilated SBL with multiple air-fluid levels”	NP	NP	NP
Tada 1994	AXR	“Distended SB with air-fluid levels”	NP	NP	NP
Zhang 1995	AXR	“Multiple air fluid levels, dilated SBL”	NP	NP	NP
Luo 1996	AXR	“Multiple niveau with dilated SBL”	NP	NP	NP
Murakami 1996	AXR	“Dilated SBL”	NP	NP	NP
Perez 1997	AXR, US	“dilated SB with multiple air fluid levels”	NP	NP	“dilated SBL with free intraperitoneal liquid”
Ido 1998	AXR, ACT	“dilated SI with air-fluid levels”	“SI obstruction and retroperitoneal abscess”	NP	NP
Igarashi 1998	CCSI, ACT	“air and fluid levels in SB”	“stenotic portion of the ileum in the sigmoid mesocolon”	NP	NP
Kaneko 1998	AXR, ACT	“dilatation of SI gas image”	“Dilated SBL”	NP	NP
Teruya 1998	AXR, ACT	“Dilated SBL”	“Dilated SBL”	NP	NP
He 1999	AXR	“Multiple air-fluid levels”	NP	NP	NP

Shibahara 1999	AXR, ACT	“niveau in the SI”	“dilated SB”	NP	NP
Kobayashi 2000	AXR, CSSI	“Diffuse SB gas with air-fluid, smooth narrowing of SB”	NP	NP	NP
Endo 2001	CSSI, ACT	“stenosis”	“SB included in the SM”	NP	NP
Okutani 2001	AXR, ACT	“multiple niveau”	“Ascites and dilatation of SI”	NP	NP
Sogo 2001	AXR, CSSI	“ air fluid levels, stenosis”	NP	NP	NP
Takikawa 2001	AXR, ACT	“air-fluid levels”	“intussusception of the SI”	NP	NP
Maruyama 2002	AXR	“ SI gas and fluid”	NP	NP	NP
Sasaki 2002	AXR, ACT	“distended SBL and niveau formation”	“very dilated SI loops with obstruction in the terminal ileum”	NP	NP
Katayanagi 2003	AXR, CSSI, ACT	“SB gas with air- fluid” “2 smooth narrowing”	“dilatation and stenosis of SB”	NP	NP
Watanabe 2003	AXR	“Dilated SI, air- fluid levels”	NP	NP	NP
Akiyama 2004	AXR, CSSI, ACT	“SB gas, stenosis”	“dilated SI at the pelvic space”	NP	NP

Koinuma 2004	CSSI, ACT	“dilatation and stenosis”	“small bowel wall was partially thickened”	NP	NP
Motohiro 2004	AXR, ACT, AUS	“dilatation and gas in the SI”	“small bowel situated in the SM”	NP	“Ascites, keyboard sign”
Yu 2004	ACT	NR	“A cluster of dilated, fluid-filled, U- and C-shaped loops of SB”	NP	NP
Maruyama 2005	AXR, CSSI, ACT	“Air- fluid levels, stenosis”	“Ileum stenosis in the pelvis”	NP	NP
Mitsui 2005	ACT	NP	“ incarcerated SBL”	NP	NP
Nachi 2005	AXR, ACT	“Ileus”	“tapered obstruction of SI in the left side of lower abdomen”	NP	NP
Ota 2005	AXR, ACT	“Multiple niveaus of the SB”	“Dilated SB”	NP	NP
Shinto 2005	AXR, ACT	“SI gas with air- fluid levels”	“Dilated SBL”	NP	NP
Van der Mieren 2005	AXR, ACT	NR	NR	NP	NP
Waku 2005	CSSI, AXR	“Obstruction of SI at the SM”	“Obstruction of SI at the lower abdomen”	NP	NP
Yang 2005	ACT	NP	“A short segment of SBL with thickened and edematous wall at the left-lower abdomen”	NP	NP

Hoshikawa 2006	AXR, ACT	“Gas in the SI”	“remarkable dilatation of the entire SI”	NP	NP
Nitta 2006	AXR, ACT	“Dilated SB”	“dilatation of SB”	NP	NP
Isobe 2007	AXR, CSSI, ACT	“Dilated and stenotic SB”	“Dilated SB”	NP	NP
Zhou 2007	ACT	NP	“dilated SBL and collapsed distal SB”	NP	NP
Collins 2008	AXR, ACT	“two prominent loops of SB in the right lower quadrant”	“dilated loops of SB with a zone of transition approximately 10 cm from the ileo-caecal valve”	NP	NP
Hibino 2008	AXR, ACT	“Dilated SB”	“Ascites and dilated SBL”	NP	NP
Papanikolaou 2008	US	NP	NP	NP	“dilated SB with free intraperitoneal liquid”
Tsukahara 2008	CSSI, ACT ACT	“Stenosis at the ileum” NP	“Incarcerated SBL in sigmoid mesocolon” “ expanded discontinuous SB around the SM”	NP	NP
Bao SQ 2009	CT	NP	“dilated SB and collapsed distal SB”	NP	NP
Kan 2009	AXR, ACT	“SB gas with niveau formation”	“2 strictures in SB separated by approximately 10 cm”	NP	NP
Murata 2009	ACT	NP	“dilated SB and collapsed distal SB”	NP	NP

Moriyama 2010	ACT	NP	“SB dilated and ascites”	NP	NP
Nihon-yanagi 2010	AXR, ACT	“Prominent SB gas”	“wall thickening of the edematous, fluid-filled ileum in the left iliac fossa and pelvic cavity”	NP	NP
Okada 2010	AXR, CSSI, ACT	“Dilated SB, niveau formation”	“Dilated SI in the left side of SM”	NP	NP
Oshima 2010	AXR, ACT	“Dilated SI, air-fluid levels”	SBL with poorly enhanced wall”	NP	NP
Takayanagi 2010	AXR, ACT	“dilated SB, multiple niveau”	“dilated SB and a stenotic portion”	NP	NP
Takeshita 2010	AXR, ACT	“Dilatation and an air-fluid level of SB”	NP	“dilated SBL, a sac-like mass ”	NP
Yang WL 2010	CT	NR	“dilated SBL and collapsed distal SB”	NR	NR
Agarwal 2011	AXR	“Multiple air-fluid levels”	NP	NP	NP
Guo 2011	CT	NP	“ascites, dilated SBL and intestinal wall tickening”	NP	NP
Harrison 2011	AXR, ACT	“dilated stomach and SB loops”	“dilated loops of proximal SB with normal distal SB”	NP	NP
Jimmy 2011	AXR, ACT	“Single dilated loop of SB in the left lower abdomen”	“Dilated SBL with a cut-off at the level of mid-ileum”	NP	NP

Kohga 2011	ACT	NP	“bird-beak sign in the lower left quadrant with proximal intestine dilatation”	NP	NP
Michiko 2011	AXR, ACT	“multiple air fluid levels” “multiple air fluid levels”	“SI obstruction of the left lower quadrant” “SI obstruction in the pelvic cavity”	NP NP	NP NP
Satomura 2011	AXR, ACT AXR, ACT	“ dilated SI and a few colon gas” “ SB gas and a few colon gas”	“SI has been incarcerated like “eight figure” behind the mesentery of sigmoid colon” “SI has been incarcerated like “eight figure” behind the mesentery of sigmoid colon”	NP NP	NP NP
Yazawa 2011	AXR, ACT	“SI gas”	“closed loop of the SI in sigmoid colon”	NP	NP
Kim 2012	AXR, ACT	“mild ileus without prominent dilation of SB”	“ascites, dilated SBL and intestinal wall thickening”	NP	NP
Koshino 2012	AXR, ACT	“SI dilated”	“Dilatation of SI”	NP	NP
Sawazaki 2012	AXR, ACT	“dilatation and stenosis”	“dilatation and stenosis of SB”	NP	NP
Shinoto 2012	AXR, CSSI, ACT	NR	“incarcerated SBL in the lateral position of SM”	NP	NP
Yao 2012	US	NP	NP	NP	“Dilated SBL”
Miura 2013	AXR, ACT AXR, ACT AXR, ACT	“Multiple niveau in SI” “Gas in the SI” Gas in the SI”	“dilated and thickened SI, beak sign” “dilated and thickened SI” “distended SI in the SM, closed loop in LLQ”	NP NP NP	NP NP NP

Nishida 2013	ACT	NP	“Loop-shaped small bowel in LLQ”	NP	NP
Saxena 2013	AXR, US	“dilated SB loops with multiple air fluid levels”	NP	NP	“Dilated SBL”
Toyoda 2013	AXR, ACT, AUS AXR, ACT	“dilated SI” “Air-fluid levels in the SB”	“cystic mass, dilation and narrowing of the SB” “closed loop an area of narrowing of the SB”	NP NP	“Cystic mass in LLQ” NP
Bandawar 2014	AXR	“dilated SB loops with multiple air fluid levels”	NP	NP	NP
Fukuzawa 2014	AXR, CSSI, ACT	“dilated SI with niveau”	Dilated SI and obstruction of SI in the SM”	NP	NP
Furukawa 2014	CCSI, ACT	“dilated SB and stenosis”	“ascites around the liver and incarcerated SB”	NP	NP
Hori 2014	AXR, ACT	“Dilated SB, niveau”	“localized SI dilation ait the dorsal of SM”	NP	NP
Li 2014	ACT	NP	“dilated SBL with multiple air fluid levels and collapsed distal SB”	NP	NP
Mandava 2014	AXR, ACT	“Multiple niveau, dilated SB”	“Dilated SBL with bird beak appearance”	NP	NP
Siaperas 2014	AXR, ACT	“Dilatation and an air-fluid level of SB”	“distended stomach and SBL with the presence of fluid in the lesser pelvis”	NP	NP
Tanaka 2014	AXR, ACT	“niveau in the SI”	“ascites, dilation of the SI with a closed loop at the dorsal surface of SM”	NP	NP

Watanabe 2014	AXR, ACT	“Dilatation and an air-fluid level of SB”	“Extensively dilated SB and a closed loop of SB in the mesosigmoid”	NP	NP
Yang 2014	AXR, ACT	“slight distension of SB with air-fluid level”	“dilated SBL”	NP	NP
Campbell 2015	AXR, ACT	“Multiple dilated loops of SB”	“a dilated proximal SB with a transition point in the left iliac fossa”	NP	NP
Farah 2015	AXR, ACT	“2 prominent loops of SB in the left lower quadrant”	“SI dilatation with free fluid level”	NP	NP
Hirata 2015	AXR, ACT	NR	NR	NP	NP
Horii 2015	AXR, ACT	“small mass in LLQ”	“dilated loops of SI, ascetic fluid in pelvis”	NP	NP
Ishita 2015	AXR, ACT	“dilatation of SI”	“enlargement of the SI and ascites“	NP	NP
Kuroda 2015	ACT	NP	“dilatation of SI and stenosis of pelvic tract”	NP	NP
Reddy 2015	AXR	“Multiple air fluid levels on the right lower abdomen”	NP	NP	NP
Shukla 2015	AXR, ACT	“Multiple air fluid levels and dilated SB loops”	“dilated SBL with minimal interloop fluid”	NP	NP
Watanabe 2015	ACT	NP	“incarcerated intestine like a 8 figure”	NP	NP

Benyamini 2016	ACT	NP	“Mildly dilated thin-walled small bowel in the mid-abdomen and pelvis”	NP	NP
Hattori 2016	AXR, ACT	“a distended SB”	“loop of the SI with proximal dilatation”	NP	NP
Iwasaki 2016	ACT	“dilation and local narrowing in the left lower quadrant”	NP	NP	NP
Kheok 2016	AXR, ACT	“Dilation of SBL and multiple air fluid levels”	“C-shaped appearance of the dilated SB with mesenteric engorgement and fat stranding”	NP	NP
Kojima 2016	AXR, ACT	“Dilatation and an air-fluid level of SB”	extensively dilated SB and a closed loop of small bowel in the pelvis, with no signs of adhesion	NP	NP
Kumagai 2016	AXR, ACT, MDCT	“Diffuse dilatation of the SB”	“dilated SBL”	“narrowing and wall thickening of SI”	NP
Matsui 2016	AXR, ACT	“dilated SB”	“stenosis of SI in the left lower abdomen”	NP	NP
Agatsuma 2017	ACT	NP	“dilation SI, bowel wall thickening and the closed loop sign”	NP	NP
Ahmad 2017	AXR	“4-5 air-fluid levels without much bowel dilatation”	NP	NP	NP

Chou 2017	ACT	NP	“long small bowel segment traversing dorsal to the sigmoid colon to left lower abdomen”	NP	NP
Hayama 2017	AXR, ACT	“dilatation of SI with niveau”	“dilation of SI”	NP	NP
Hirashima 2017	AXR, ACT	“A large amount of gas in the SI”	“Stenosis of SI in the LLQ, dilation on the dorsal side of the sigmoid colon”	NP	NP
Kayano 2017	AXR, ACT	“A large amount of gas in small intestine”	“Stenosis of SI in the left lower abdomen and dilation on the dorsal side of the sigmoid colon”	NP	NP
	AXR, ACT	“Dilatation of the SI with multiple niveau”	“SI extending in the shape of the figure 8 in the left lower abdomen”	NP	NP
Kishi 2017	AXR, ACT	NR	“wall thickening of the edematous, fluid-filled ileum in the left iliac fossa and pelvic cavity”	NP	NP
Sasaki 2017	AXR, ACT	Dilatation of SB”	“Dilatation of SI herniated in the SM”	NP	NP
Shibuya 2017	AXR, ACT	“Dilatation of SB”	“obstruction of the SB in the left lower abdomen with SB dilatation on the oral side”	NP	NP
Nagano 2018	MDCT	NP	NP	“incarcerated SBL in the left pelvic space”	NP
Taniguchi 2018	ACT	NP	“A closed loop obstruction around sigmoid colon”	NP	NP

SDC 3. Table 3: Radiological evaluation of included studies.

References	Duration of the procedure	Diameter of defect (cm)	Length of incarcerated small bowel (cm)	Adhesions of herniated ileum at the hernial orifice	Type of adhesion
Benson 1964	NR	2	15	NR	NR
Steele 1973	NR	2	NR	NR	NR
Fujioka 1976	NR NR	2,5 1,5	3 5	NR NR	NR NR
Bircher 1981	NR NR	NR NR	NR NR	NR NR	NR NR
Li 1982	NR	4	NR	NR	NR
Li 1985	NR	2	NR	NR	NR
Sugimoto 1985	NR	3	15	NR	NR
Matsuda 1989	NR	3	10	NR	NR
Mo 1991	NR	3	NR	NR	NR
Johnson 1992	NR	5	NR	NR	NR
Tada 1994	NR	2	10	NR	NR
Zhang 1995	NR	3	NR	NR	NR
Luo 1996	NR	3	NR	NR	NR
Murakami 1996	NR	1,5	5	NR	NR

Perez 1997	NR	NR	NR	NR	NR
Ido 1998	NR	1	NR	NR	NR
Igarashi 1998	NR	2,1	7,5	NR	NR
Kaneko 1998	NR	2,5	150	NR	NR
Teruya 1998	NR	1,5	10	NR	NR
He 1999	NR	3	NR	NR	NR
Shibahara 1999	NR	1,5	NR	NR	NR
Kobayashi 2000	NR	2 2	20 10	Yes No	Mild NR
Endo 2001	NR	2	130	NR	NR
Okutani 2001	NR	10	70	NR	NR
Sogo 2001	NR	3	NR	NR	NR
Takikawa 2001	NR	2	70	NR	NR
Maruyama 2002	NR NR	3 2,5	5 5	NR NR	NR NR
Sasaki 2002	NR	3,5	30	NR	NR
Katayanagi 2003	NR	3	15	NR	NR
Watanabe 2003	NR	NR	10	NR	NR
Akiyama 2004	NR	2	4	NR	NR
Koinuma 2004	NR	2	NR	NR	NR

Motohiro 2004	NR	5	50	NR	NR
Yu 2004	NR	5	NR	NR	NR
Maruyama 2005	NR	2,5	NR	NR	NR
Mitsui 2005	NR	3	15	NR	NR
Nachi 2005	NR	2,5	10	NR	NR
Ota 2005	NR	3	NR	NR	NR
Shinto 2005	NR	2	NR	NR	NR
Van der Mieren 2005	NR	NR	NR	NR	NR
Waku 2005	NR	2,5	NR	NR	NR
Yang 2005	NR	NR	20	NR	NR
Hoshikawa 2006	NR	2	NR	NR	NR
Nitta 2006	NR	2,5	NR	NR	NR
Isoe 2007	NR	3	4	NR	NR
Zhou 2007	NR	3	NR	NR	NR
Collins 2008	NR	4	NR	NR	NR
Hibino 2008	NR	3	40	NR	NR
Papanikolaou 2008	NR	5	NR	NR	NR
Tsukahara 2008	NR NR	3 2	10 20	NR NR	NR NR

Bao SQ 2009	NR	3	NR	NR	NR
Kan 2009	NR	4	NR	NR	NR
Murata 2009	NR	2	4	NR	NR
Moriyama 2010	NR	2	15	NR	NR
Nihon-Yanagi 2010	NR	3	NR	Yes	NR
Okada 2010	NR	1,5	10	NR	NR
Oshima 2010	NR	1	10	NR	NR
Takayanagi 2010	NR	2	NR	NR	NR
Takeshita 2010	NR	2,5	20	NR	NR
Yang WL 2010	NR NR	5 4	NR NR	NR NR	NR NR
Agarwal 2011	NR	1,8	15	NR	NR
Guo 2011	NR	4	NR	NR	NR
Harrison 2011	NR	NR	NR	NR	NR
Jimmy 2011	NR	2	NR	NR	NR
Kohga 2011	NR	3	NR	NR	NR
Michiko 2011	NR NR	1,5 2	7 NR	NR NR	NR NR
Satomura 2011	65 minutes 59 minutes	4 3	8 10	NR NR	NR NR

Yazawa 2011	NR	1,5	10	No	NR
Kim 2012	NR	3	150	Yes	Mild
Koshino 2012	NR	2	10	NR	NR
Sawazaki 2012	NR	2	10	Yes	Mild
Shinoto 2012	NR	2	150	NR	NR
Yao 2012	NR	4	NR	NR	NR
Miura 2013	NR NR NR	2 3 1,5	NR NR 15	NR NR NR	NR NR NR
Nishida 2013	NR	2	10	NR	NR
Saxena 2013	NR	4	50	NR	NR
Toyoda 2013	NR NR	2 1	20 75	NR NR	NR NR
Bandawar 2014	NR	2	25	NR	NR
Fukuzawa 2014	44 minutes	NR	NR	NR	NR
Furukawa 2014	NR	2	10	NR	NR
Hori 2014	NR	3	NR	NR	NR
Li 2014	40 minutes	2,5	15	NR	NR
Mandava 2014	NR	NR	NR	NR	NR
Siaperas 2014	NR	3	NR	NR	NR

Tanaka 2014	NR	2	5	Yes	NR
Watanabe 2014	NR	3	10	Yes	Mild
Yang 2014	NR	2	15	NR	NR
Campbel 2015	60 minutes	3	6	NR	NR
Farah 2015	NR	4,5	NR	NR	NR
Hirata 2015	NR	2	NR	NR	NR
Horii 2015	NR	2	30	NR	NR
Ishita 2015	NR	2	NR	NR	NR
Kuroda 2015	NR	3	10	NR	NR
Reddy 2015	NR	NR	NR	NR	NR
Shukla 2015	NR	2	NR	NR	NR
Watanabe 2015	NR	3	15	NR	NR
Benyamini 2016	NR	2	NR	NR	NR
Hattori 2016	NR	2	5	NR	NR
Iwasaki 2016	NR	2	10	NR	NR
Kheok 2016	NR	3	10	NR	NR
Kojima 2016	NR	NR	15	NR	NR
Kumagai 2016	NR	NR	NR	NR	NR
Matsui 2016	NR	2	5	NR	NR

Agatsuma 2017	NR	“small defect”	30	NR	NR
Ahmad 2017	NR	2,5	8	NR	NR
Chou 2017	NR	NR	10	NR	NR
Hayama 2017	NR	2,5	10	NR	NR
Hirashima 2017	NR	NR	100	NR	NR
Kayano 2017	139 minutes	NR	NR	Yes	Severe
Kayano 2017	84 minutes	NR	NR	NR	NR
Kishi 2017	NR	NR	50	NR	NR
Sasaki 2017	NR	1,5	NR	NR	NR
Shibuya 2017	108 minutes	NR	NR	Yes	Mild
Nagano 2018	NR	2	6	NR	NR
Taniguchi 2018	76 minutes	NR	NR	Yes	NR

SDC 4. Table 4: Intraoperative findings

References	Nation	Number of patients	Age/sex	Clinical Signs and symptoms	History of surgery or inflammation
Benson 1964	USA	1	42/F	SBO	No
Steele 1973	USA	1	49/F	SBO	Hysterectomy
Fujioka 1976	Japan	2	61/M 50/M	SBO SBO	No No
Bircher 1981	England	2	68/F 68/F	SBO SBO	No Hysterectomy
Li 1982	China	1	69/F	SBO	No
Li 1985	China	1	62/F	SBO	Hysterectomy
Sugimoto 1985	Japan	1	38/M	SBO	No
Matsuda 1989	Japan	1	64/M	SBO	No
Mo 1991	Korea	1	59/M	SBO	No
Johnson 1992	USA	1	20/F pregnant	SBO	No
Tada 1994	Japan	1	83/M	SBO	No
Zhang 1995	China	1	51/M	SBO	No
Luo 1996	China	1	69/F	SBO, appendicitis	Hysterectomy
Murakami 1996	Japan	1	80 M	SBO	No
Perez 1997	Spain	1	54/M	SBO	Cholecistectomy
Ido 1998	Japan	1	66/M	SBO	No
Igarashi 1998	Japan	1	60/M	SBO	No
Kaneko 1998	Japan	1	53/F	SBO	No
Teruya 1998	Japan	1	79/M	SBO	No
He 1999	China	1	55/M	SBO	No

Shibahara 1999	Japan	1	50/M	SBO	No
Kobayashi 2000	Japan	2	44/F 57/M	SBO SBO	No No
Endo 2001	Japan	1	69/M	SBO	No
Hokutani 2001	Japan	1	80/M	SBO	No
Sogo 2001	Japan	1	65/M	SBO	No
Takikawa 2001	Japan	1	62/M	SBO	No
Maruyama 2002	Japan	2	71/M 78/M	SBO SBO	Gastrectomy No
Sasaki 2002	Japan	1	63/M	SBO	Appendicectomy
Katayanagi 2003	Japan	1	59/M	SBO	No
Watanabe 2003	Japan	1	68/M	SBO	No
Akiyama 2004	Japan	1	39/F	SBO	Caesarean section
Koinuma 2004	Japan	1	40/F	SBO	No
Motohiro 2004	Japan	1	60/M	SBO	No
Yu 2004	China	1	81/F	SBO	No
Maruyama 2005	Japan	1	33/M	SBO	No
Mitsui 2005	Japan	1	33/F	SBO	No
Nachi 2005	Japan	1	62/M	SBO	No
Ota 2005	Japan	1	59/M	SBO	No
Shinto 2005	Japan	1	96/M	SBO	No
Van der Mieren 2005	Belgium	1	F/ Postpartum	SBO	No
Waku 2005	Japan	1	65/F	SBO	No

Yang 2005	Taiwan	1	66/M	SBO	No
Hoshikawa 2006	Japan	1	61/M	SBO	No
Nitta 2006	Japan	1	39/M	SBO	No
Isobe 2007	Japan	1	54/M	SBO	No
Zhou 2007	China	1	57/M	SBO	No
Collins 2008	Ireland	1	60/M	SBO	No
Hibino 2008	Japan	1	64/F	SBO	No
Papanikolaou 2008	Greece	1	3/F	SBO	No
Tsukahara 2008	Japan	2	34/M 68/M	SBO SBO	No No
Bao SQ 2009	China	1	62/F	SBO	No
Kan 2009	Japan	1	46/M	SBO	Appendicectomy
Murata 2009	Japan	1	80/F	SBO	No
Moriyama 2010	Japan	1	48/F	SBO	No
Nihon-yanagi 2010	Japan	1	28/M	SBO	No
Okada 2010	Japan	1	51/M	SBO	No
Oshima 2010	Japan	1	30/F	SBO	No
Takayanagi 2010	Japan	1	62/F	SBO	No
Takehita 2010	Japan	1	56/F	SBO	No
Yang WL 2010	China	2	62/M 48/M	SBO SBO, appendicitis	No No
Agarwal 2011	India	1	78/M	SBO	No

Guo 2011	China	1	39/M	SBO	No
Harrison 2011	England	1	63/M	SBO	No
Jimmy 2011	India	1	54/F	SBO	No
Kohga 2011	Japan	1	39/M	SBO	No
Michiko 2011	Japan	2	44/M 45/F	SBO SBO	Appendicectomy No
Satomura 2011	Japan	2	79/M 80/M	SBO SBO	No No
Yazawa 2011	Japan	1	51/M	SBO	Appendicectomy
Kim 2012	Korea	1	44/F	SBO	Tubal ligation
Koshino 2012	Japan	1	81/M	SBO	No
Sawazaki 2012	Japan	1	61/M	SBO	No
Shinoto 2012	Japan	1	81/F	SBO	No
Yao 2012	China	1	60/M	SBO	No
Miura 2013	Japan	3	34/F 36/M 81/F	SBO SBO SBO	No Laparoscopic surgery for DP No
Nishida 2013	Japan	1	55/F	SBO	No
Saxena 2013	India	1	63/M	SBO	No
Toyoda 2013	Japan	2	35/F 37/M	SBO SBO	No No
Bandawar 2014	India	1	42/M	SBO	No
Li 2014	China	1	59/M	SBO	No
Fukuzawa 2014	Japan	1	39/M	SBO	No
Furukawa 2014	Japan	1	42/M	SBO	No

Hori 2014	Japan	1	46/M	SBO	No
Mandava 2014	India	1	Elderly/F	SBO	Hysterectomy
Siaperas 2014	Greece	1	28/F	SBO	Appendicectomy
Tanaka 2014	Japan	1	49/F	SBO	No
Watanabe 2014	Japan	1	26/M	SBO	No
Yang 2014	Korea	1	49/F	SBO	No
Campbell 2015	England	1	56/F	SBO	No
Farah 2015	Morocco	1	44/M	SBO	Segmental colectomy
Hirata 2015	Japan	1	35/F pregnant	SBO	No
Horii 2015	Japan	1	96/F	SBO	No
Ishita 2015	Japan	1	35/F pregnant	SBO	No
Kuroda 2015	Japan	1	64/F	SBO	No
Reddy 2015	India	1	50/M	SBO	No
Shukla 2015	India	1	62/M	SBO	No
Watanabe 2015	Japan	1	56/M	SBO	No
Benyamini 2016	Hawaii	1	40/F	SBO	Pancreatectomy, Splenectomy
Hattori 2016	Japan	1	53/M	SBO	No
Iwasaki 2016	Japan	1	50/M	SBO	No
Kheok 2016	Singapore	1	75/M	SBO	No
Kojima 2016	Japan	1	43/F	SBO	No
Kumagai 2016	Japan	1	82/M	SBO	No
Matsui 2016	Japan	1	51/M	SBO	No
Agatsuma 2017	Japan	1	17/F	SBO	No

Ahmad 2017	USA	1	55/M	SBO	No
Chou 2017	China	1	55/M	SBO	Partial descending colectomy
Hayama 2017	Japan	1	80/M	SBO	No
Hirashima 2017	Japan	1	60/M	SBO	No
Kayano 2017	Japan	2	42/F 53/M	SBO SBO	No No
Kishi 2017	Japan	1	56/M	SBO	No
Sasaki 2017	Japan	1	70/F	SBO	Appendicectomy, Ovarian tumor
Shibuya 2017	Japan	1	45/F	SBO	No
Nagano 2018	Japan	1	52/M	SBO	Appendicectomy
Taniguchi 2018	Japan	1	72/F	SBO	Sigmoidectomy

SDC 5. Type of surgical treatment

References	Time from onset to operation	Surgical procedure	Adhesion	Bowel resection	Method of repair of the hernial orifice	Postoperative course
Benson 1964	7 days	Explorative laparotomy	NR	No	Interrupted sutures	Uneventful
Steele 1973	NR	Explorative laparotomy	NR	No	Interrupted sutures	Uneventful
Fujioka 1976	Day of admission Day of admission	Open laparotomy Open laparotomy	NR NR	No No	Closure the sac Closure the sac	Uneventful Uneventful
Bircher 1981	5 days 7days	Explorative laparotomy Explorative laparotomy	NR NR	Yes No	NR NR	Wound infection Uneventful

Li 1982	6h	Explorative laparotomy	NR	Yes, 30 cm	NR	Uneventful
Li 1985	4 days	Explorative laparotomy	NR	Yes, 30 cm	NR	Uneventful
Sugimoto 1985	Day of admission	Open laparotomy	NR	No	NR	Uneventful
Matsuda 1989	Day of admission	Open laparotomy	NR	No	Interrupted slitches	Uneventful
Mo 1991	10 days	Explorative laparotomy	NR	Yes, 40 cm	NR	Uneventful
Johnson 1992	7 days	Explorative laparotomy	NR	Yes, 160 cm	NR	Uneventful
Tada 1994	8 days	Open laparotomy	NR	No	Sutures	Uneventful
Zhang 1995	37 h	Explorative laparotomy	NR	Yes, 40 cm	NR	Uneventful
Luo 1996	24 h	Explorative laparotomy	NR	Yes, 40 cm	NR	Uneventful
Murakami 1996	10 days	Open laparotomy	NR	No	Sutures	Uneventful
Perez 1997	NR	Explorative laparotomy	NR	Yes	Sutures	Uneventful
Ido 1998	3 days	Open laparotomy	NR	No	Sutures	Uneventful
Igarashi 1998	11 days	Open laparotomy	NR	No	Interrupted sutures	Uneventful
Kaneko 1998	Day of admission	Emergency laparotomy	NR	Yes	NR	Uneventful
Teruya 1998	7 days	Open laparotomy	NR	No	Interrupted sutures	Uneventful
He 1999	72 h	Explorative laparotomy	NR	Yes, 100 cm	Interrupted sutures	Uneventful

Shibahara 1999	7 days	Open laparotomy	NR	No	Sutures	Uneventful
Kobayashi 2000	NR 21 days	Open laparotomy Open laparotomy	Yes NR	Yes No	Sutures Sutures	Uneventful Uneventful
Endo 2001	NR	Open laparotomy	NR	No	NR	Uneventful
Okutani 2001	4 days	Open laparotomy	NR	Yes	NR	Uneventful
Sogo 2001	11 days	Open laparotomy	NR	No	Sutures	Uneventful
Takikawa 2001	9 days	Open laparotomy	NR	Yes, 7 cm	Sutures	Uneventful
Maruyama 2002	8h 22 days	Explorative laparotomy Explorative laparotomy	NR NR	No No	Interrupted sutures Interrupted sutures	Uneventful Uneventful
Sasaki 2002	NR	Emergency laparoscopy and then open laparotomy	NR	Yes, 30 cm	NR	Uneventful
Katayanagi 2003	34 days	Open laparotomy	NR	No	Sutures	Uneventful
Watanabe 2003	15 days	Full laparoscopic	NR	No	NR	Uneventful
Akiyama 2004	14 days	Open laparotomy	NR	No	Sutures	Uneventful
Koinuma 2004	NR	Full laparoscopic	NR	No	Hernia stapler	Uneventful
Motohiro 2004	NR	Open laparotomy	NR	No	NR	Uneventful
Yu 2004	12 h	Explorative laparotomy	NR	Yes, 5 cm	NR	Uneventful

Maruyama 2005	16 days	Full laparoscopic	NR	No	NR	Uneventful
Mitsui 2005	10 days	Full laparoscopic	NR	No	Sutures	Uneventful
Nachi 2005	26 days	Open laparotomy	NR	No	Sutures	Uneventful
Ota 2005	16 days	Open laparotomy	NR	No	Sutures	Uneventful
Shinto 2005	15 days	Open laparotomy	NR	No	Sutures	Uneventful
Van der Mieren 2005	Day of admission	Full laparoscopic	NR	No	Sutures	Uneventful
Waku 2005	6 days	Open laparotomy	NR	No	Sutures	Uneventful
Yang 2005	48 h	Emergency laparotomy	NR	No	Sutures	Uneventful
Hoshikawa 2006	13 days	Open laparotomy	NR	No	Sutures	Uneventful
Nitta 2006	16 days	Full laparoscopic	NR	No	Sutures	Uneventful
Isobe 2007	6 days	Full laparoscopic	NR	No	Sutures	Uneventful
Zhou 2007	48 h	Explorative laparotomy	NR	Yes, 20 cm	Sutures	Uneventful
Collins 2008	48 h	Explorative laparotomy	NR	No	Interrupted sutures	Uneventful
Hibino 2008	NR	Open laparotomy	NR	Yes, 60 cm	Sutures	Uneventful
Papanikolaou 2008	12 h	Explorative laparotomy	NR	Yes, 60 cm	NR	Uneventful

Tsukahara 2008	NR NR	Open laparotomy Open laparotomy	NR NR	Yes No	Interrupted sutures Interrupted sutures	Uneventf ul Uneventf ul
Bao SQ 2009	37 h	Explorative laparotomy	NR	Yes, 12 cm	NR	Uneventf ul
Kan 2009	18 days	Explorative laparotomy	NR	Yes	NR	Uneventf ul
Murata 2009	13 days	Open laparotomy	NR	No	Interrupted sutures	Uneventf ul
Moriyama 2010	15 h	Open laparotomy	NR	No	Sutures	Uneventf ul
Nihon- Yanagi 2010	NR	Explorative laparotomy	Yes	No	Running sutures	Uneventf ul
Okada 2010	7 days	Explorative laparotomy	NR	Yes	Sutures	Uneventf ul
Oshima 2010	NR	Open laparotomy	NR	No	Sutures	Uneventf ul
Takayanagi 2010	15 days	Open laparotomy	NR	NR	Sutures	Uneventf ul
Takehita 2010	7 days	Explorative laparotomy	NR	No	NR	Uneventf ul
Yang WL 2010	9h 24 h	Explorative laparotomy Explorative laparotomy	NR NR	Yes, 20 cm Yes, 30 cm	NR NR	Uneventf ul Uneventf ul
Agarwal 2011	Day of admission	Explorative laparotomy	NR	No	Interrupted sutures	Uneventf ul
Guo 2011	9 h	Explorative laparotomy	NR	Yes, 65 cm	NR	Uneventf ul
Harrison 2011	NR	Explorative laparotomy	NR	Yes	NR	Uneventf ul

Jimmy 2011	NR	Full laparoscopic	NR	No	Intra-corporeal sutures	Uneventful
Kohga 2011	NR	Full laparoscopic	NR	No	Sutures	Uneventful
Michiko 2011	13 days Day of admission	Explorative laparotomy Emergency laparotomy	NR NR	No No	Sutures Sutures	Uneventful Uneventful
Satomura 2011	3 days 9 days	Full laparoscopic Full laparoscopic	NR NR	No No	Sutures Sutures	Uneventful Uneventful
Yazawa 2011	NR	Full laparoscopic	No	No	Sutures	Uneventful
Kim 2012	NR	Explorative laparoscopy and the an open laparotomy	Yes	Yes	Non-absorbable sutures	Uneventful
Koshino 2012	14 days	Open laparotomy	NR	No	Sutures	Uneventful
Sawazaki 2012	18 days	First an explorative laparoscopy and the an open laparotomy	Yes	No	Sutures	Uneventful
Shinoto 2012	NR	Open laparotomy	NR	NR	NR	Uneventful
Yao 2012	7 h	Explorative laparotomy	NR	Yes, 30 cm	NR	Uneventful
Miura 2013	3 days 1 day 3 days	Open laparotomy Open laparotomy Open laparotomy	NR NR NR	No No No	Sutures Sutures Sutures	Uneventful Uneventful Uneventful

Nishida 2013	NR	Full laparoscopic	NR	No	Sutures	Uneventful
Saxena 2013	NR	Emergency laparotomy	NR	Yes	NR	Uneventful
Toyoda 2014	14 h 10 h	Full laparoscopic Full laparoscopic	NR NR	No No	Sutures Sutures	Uneventful Uneventful
Bandawar 2014	NR	Explorative laparotomy	NR	Yes	NR	Uneventful
Fukuzawa 2014	10 days	Full laparoscopic	NR	No	NR	Uneventful
Furukawa 2014	13 days	Emergency laparoscopy	NR	No	Sutures	Uneventful
Hori 2014	24 h	Full laparoscopic	NR	Yes	Sutures	Uneventful
Li 2014	5 days	Emergency laparotomy	NR	No	NR	Uneventful
Mandava 2014	Day of admission	Emergency laparotomy	NR	Yes	NR	Uneventful
Siaperas 2014	NR	Diagnostic laparoscopy and then a mini-laparotomy	NR	Yes	Interrupted sutures	Uneventful
Tanaka 2014	Day of admission	Emergency laparotomy	Yes	No	NR	Uneventful
Watanabe 2014	6 days	Full laparoscopic	Yes	No	Interrupted sutures	Uneventful
Yang 2014	2 days	Full laparoscopic	NR	No	NR	Uneventful
Campbel 2015	Day of admission	Full laparoscopic	NR	No	Intra-corporeal sutures	Uneventful
Farah 2015	NR	Explorative laparotomy	NR	No	Interrupted sutures	Uneventful

Hirata 2015	3 days	Caesarian section, laparotomy	NR	No	NR	Uneventful
Horii 2015	Day of admission	Emergency laparotomy	NR	Yes	NR	Death for AP 46 days after surgery
Ishita 2015	3 days	Caesarian section, laparotomy	NR	NR	Sutures	Uneventful
Kuroda 2015	9 days	Full laparoscopic	NR	Yes, 5 cm	Intra-corporeal sutures	Uneventful
Reddy 2015	5 days	Explorative laparotomy	NR	No	NR	Uneventful
Shukla 2015	NR	Explorative laparotomy	NR	Yes	NR	Death for RD 2 months later
Watanabe 2015	3 days	Full laparoscopic	NR	No	Sutures	Uneventful
Benyamini 2016	48 h	Full laparoscopic	NR	No	NR	Uneventful
Hattori 2016	48 h	Full laparoscopic	NR	No	Non-absorbable sutures	Uneventful
Iwasaki 2016	7 days	Open laparotomy	NR	No	Sutures	Uneventful
Kheok 2016	NR	Explorative laparotomy	NR	Yes	NR	Uneventful
Kojima 2016	NR	Full Laparoscopic	NR	No	NR	Uneventful
Kumagai 2016	14 days	Full laparoscopic	NR	No	NR	Uneventful
Matsui 2016	4 days	Full laparoscopic	NR	No	Interrupted sutures	Uneventful

Agatsuma 2017	NR	Open laparotomy	NR	No	Running sutures	Uneventful
Ahmad 2017	24 h	Explorative laparotomy	NR	No	Absorbable sutures	Uneventful
Chou 2017	5 days	Full Laparoscopic	NR	No	NR	Uneventful
Hayama 2017	9 days	Full laparoscopic	NR	No	Opening hernia orifice	Uneventful
Hirashima 2017	NR	Explorative laparotomy	NR	No	NR	Uneventful
Kayano 2017	7 days 7days	Full laparoscopic Full laparoscopic	Yes NR	Yes No	Intracorporeal sutures Intracorporeal sutures	Uneventful Uneventful
Kishi 2017	NR	Full laparoscopic	NR	No	NR	Uneventful
Sasaki 2017	NR	Full laparoscopic	NR	No	Sutures	Uneventful
Shibuya 2017	14 days	Full aparoscopic	Yes	No	NR	Uneventful
Nagano 2018	9 days	Open laparotomy	NR	No	Absorbable sutures	Uneventful
Tanighuchi 2018	NR	First SPS and then laparotomy	Yes	No	NR	Uneventful

SDC 6: Characteristics of the defect and incarcerated small bowel

References	Diameter of defect (cm)	Length of incarcerated small bowel (cm)
Benson 1964	2	15
Steele 1973	2	NR
Fujioka 1976	2,5 1,5	3 5

Bircher 1981	NR NR	NR NR
Li 1982	4	NR
Li 1985	2	NR
Sugimoto 1985	3	15
Matsuda 1989	3	10
Mo 1991	3	NR
Johnson 1992	5	NR
Tada 1994	2	10
Zhang 1995	3	NR
Luo 1996	3	NR
Murakami 1996	1,5	5
Perez 1997	NR	NR
Ido 1998	1	NR
Igarashi 1998	2,1	7,5
Kaneko 1998	2,5	150
Teruya 1998	1,5	10
He 1999	3	NR
Shibahara 1999	1,5	NR
Kobayashi 2000	2 2	20 10
Endo 2001	2	130
Okutani 2001	10	70
Sogo 2001	3	NR
Takikawa 2001	2	70
Maruyama 2002	3 2,5	5 5
Sasaki 2002	3,5	30
Katayanagi 2003	3	15
Watanabe 2003	NR	10
Akiyama 2004	2	4
Koinuma 2004	2	NR

Motohiro 2004	5	50
Yu 2004	5	NR
Maruyama 2005	2,5	NR
Mitsui 2005	3	15
Nachi 2005	2,5	10
Ota 2005	3	NR
Shinto 2005	2	NR
Van der Mieren 2005	NR	NR
Waku 2005	2,5	NR
Yang 2005	NR	20
Hoshikawa 2006	2	NR
Nitta 2006	2,5	NR
Isobe 2007	3	4
Zhou 2007	3	NR
Collins 2008	4	NR
Hibino 2008	3	40
Papanikolaou 2008	5	NR
Tsukahara 2008	3 2	10 20
Bao SQ 2009	3	NR
Kan 2009	4	NR
Murata 2009	2	4
Moriyama 2010	2	15
Nihon-Yanagi 2010	3	NR
Okada 2010	1,5	10
Oshima 2010	1	10
Takayanagi 2010	2	NR
Takeshita 2010	2,5	20
Yang WL 2010	5 4	NR NR

Agarwal 2011	1,8	15
Guo 2011	4	NR
Harrison 2011	NR	NR
Jimmy 2011	2	NR
Kohga 2011	3	NR
Michiko 2011	1,5 2	7 NR
Satomura 2011	4 3	8 10
Yazawa 2011	1,5	10
Kim 2012	3	150
Koshino 2012	2	10
Sawazaki 2012	2	10
Shinoto 2012	2	150
Yao 2012	4	NR
Miura 2013	2 3 1,5	NR NR 15
Nishida 2013	2	10
Saxena 2013	4	50
Toyoda 2013	2 1	20 75
Bandawar 2014	2	25
Fukuzawa 2014	NR	NR
Furukawa 2014	2	10
Hori 2014	3	NR
Li 2014	2,5	15
Mandava 2014	NR	NR
Siaperas 2014	3	NR
Tanaka 2014	2	5
Watanabe 2014	3	10
Yang 2014	2	15

Campbel 2015	3	6
Farah 2015	4,5	NR
Hirata 2015	2	NR
Horii 2015	2	30
Ishita 2015	2	NR
Kuroda 2015	3	10
Reddy 2015	NR	NR
Shukla 2015	2	NR
Watanabe 2015	3	15
Benyamini 2016	2	NR
Hattori 2016	2	5
Iwasaki 2016	2	10
Kheok 2016	3	10
Kojima 2016	NR	15
Kumagai 2016	NR	NR
Matsui 2016	2	5
Agatsuma 2017	“small defect”	30
Ahmad 2017	2,5	8
Chou 2017	NR	10
Hayama 2017	2,5	10
Hirashima 2017	NR	100
Kayano 2017	NR	NR
Kayano 2017	NR	NR
Kishi 2017	NR	50
Sasaki 2017	1,5	NR
Shibuya 2017	NR	NR
Nagano 2018	2	6
Taniguchi 2018	NR	NR