

Table S1 Data extracted from cases in case reports

Reference	Age, Sex	Symptom	Autoimmune disease	Hyperglobulinemia (lg)	Tumor size	Suspected diagnosis	Surgery	Adjuvant therapy	Stage	Follow-up (month)	Outcome
You, 2020 (56)	35, M	Dyspnea	MG	NA	7.4	Thymoma	Total thymectomy	no	I	2	Uneventful
Yokose, 1998 (55) <sup>†</sup>	55, F	Back pain	RA	NA	7.5	Thymoma	Tumor resection (median sternotomy)	no	I	30	Uneventful
Yang, 2021 (53)	45, F	NA	NA	NA	2.2	Parathyroid adenoma	Tumor resection	NA	NA	NA	NA
Yanagiya, 2017 (52)	68, F	Asymptomatic	no	NA	2.8	Thymic neoplasm	Extended thymectomy (median sternotomy)	no	I	6	uneventful
Yan, 2018 (51)	50, F	Papules	HT	no	NA	NA	Extended thymectomy	Radiotherapy	I	NA	NA
Yamasaki, 1998 (50)	75, F	Asymptomatic	SS	A	13.1	NA	Extended thymectomy	no	II	24	uneventful
	61, M	Asymptomatic	SS	A, G	9.5	NA	Total thymectomy	Radiotherapy	I	NA	NA
Yamada, 2003 (49)	46, F	Asymptomatic	SS	NA	17.5	NA	Tumor resection (VATS)	NA	I	6	uneventful
Wang, 2016 (48)	37, F	Asymptomatic	SS	NA	7	NA	Tumor resection	no	I	12	Uneventful
	60, F	Edema	no	NA	8	NA	Tumor resection	NA	I	NA	NA
	38, F	Asymptomatic	suspected	NA	10	NA	Tumor resection	Chemotherapy (CHOP)	III	60	uneventful
Sunohara, 2009 (46)	26, F	Asymptomatic	SS	A, G	9	NA	Extended thymectomy (median sternotomy)	no	II	18	Uneventful
Sunada, 2007 (45)	34, F	Asymptomatic	SS	NA	NA	NA	Tumor resection (VATS)	Chemotherapy	IV	NA	NA
Sun, 2012 (44)	41, F	Asymptomatic	SS	poly	10	Thymoma	Tumor resection	Chemotherapy (R-CHOP)	I	3	uneventful
	35, F	Asymptomatic	SS	poly	12	NA	Tumor resection	Chemotherapy (R-CHOP) + Radiotherapy	II	18	uneventful
	36, M	Asymptomatic	SS	NA	9	Thymoma	Tumor resection	Chemotherapy (CHOP) + Radiotherapy	I	24	uneventful
Sugimoto, 2014 (43)	42, M	Cough and fever	NA	G	6	NA	Tumor resection (VATS)	Chemotherapy (RTX)	NA	36	uneventful
Song, 2011 (42)	35, F	Asymptomatic	no	G, A, E, M	6	Thymoma	Tumor resection (median sternotomy)	NA	I	NA	NA
Shi, 2018 (57)	33, F	Asymptomatic	SS	G, A, M	14	NA	Tumor resection (VATS)	no	NA	24	Uneventful
	56, F	Asymptomatic	SS	G, A, M	9	Thymoma	Tumor resection (VATS)	RTX	NA	18	Uneventful
Sakamoto, 2009 (41)	71, F	Asymptomatic	SS	G, A	6.5	Thymoma	Total thymectomy	no	I	44	Uneventful
Rymkiewicz, 2006 (40)	43, F	NA	no	NA	NA	Paraganglioma	NA	Chemotherapy (CHOP)	IV	18	Relapse and metastasis
Petersen, 2015 (39)	60, F	Asymptomatic	SLE	NA	6.2	Thymoma	Total thymectomy (median sternotomy)	no	I	8	Uneventful
Ota, 2013 (38)	23, F	Asymptomatic	no	no	10.5	MALT	Extended thymectomy (median sternotomy)	Chemotherapy (R-CHOP)	II	60	uneventful
Ortonne, 2005 (37)	40, F	Asymptomatic	SS	A	NA	NA	Tumor resection (median sternotomy)	no	I	132	Lymph node metastasis
Nakamura, 1993 (36) <sup>†</sup>	59, F	Asymptomatic	SS	NA	NA	NA	Tumor resection	Radiotherapy	NA	48	Uneventful
Naithani, 2012 (35)	14, F	Chest pain	no	G, A	6	NA	no	Chemotherapy (R-CVP) + Radiotherapy	II	13	Uneventful

Table S1 (continued)

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Nagasaka, 2000 (34)	36, F	Asymptomatic	SS	poly	3	NA	Total thymectomy	Chemotherapy	III	8	Relapse and die of cardiac shock
Muramatsu, 2013 (33)	52, F	Asymptomatic	no	NA	13.5	NA	Total thymectomy (median sternotomy)	no	IV	NA	uneventful
Moriyama, 2000 (32)	63, F	Asymptomatic	NA	G, A	17	NA	Tumor resection (median sternotomy)	no	I	47	uneventful
Momoi, 2016 (31)	58, F	Cough and dyspnea	SS	NA	3	NA	Total thymectomy	Chemotherapy (R-CVP)	II	12	uneventful
McCluggage, 2000 (30)	63, F	Fatigue, weight loss	suspected	poly	6	NA	Tumor resection (median sternotomy)	NA	IV	NA	NA
Masunaga, 2008 (29)	60, F	Chest discomfort	SS	NA	7.5	Thymoma	Extended thymectomy	NA	NA	NA	NA
Maeda, 2008 (28)	23, F	Asymptomatic	SLE	G, A	11.5	Thymic neoplasm	Extended thymectomy	no	I	24	uneventful
Lorsbach, 2000 (27)	68, M	Asymptomatic	no	NA	NA	NA	Tumor resection (median sternotomy)	no	NA	lost (transform to large cell lymphoma)	NA
	36, F	Asymptomatic	lupus	G	1.5	NA	Tumor resection	Radiotherapy	NA	5	Uneventful
	54, F	Asymptomatic	SS	NA	NA	NA	Tumor resection (median sternotomy)	no	NA	120	Uneventful
Kuroki, 2004 (26)	75, M	NA	no	no	NA	NA	NA	NA	NA	NA	NA
	64, F	NA	no	G, A, M	NA	NA	NA	NA	NA	NA	NA
	30, F	NA	no	G, M	NA	NA	NA	NA	NA	NA	NA
Kurabayashi, 2010 (25)	53, F	Asymptomatic	SS	G, A	8	Thymoma	Extended thymectomy	no	I	NA	NA
Kitai, 2009 (24)	48, M	Asymptomatic	no	NA	NA	NA	Extended thymectomy (median sternotomy)	no	I	NA	NA
Kinoshita, 2008 (23)	68, M	Asymptomatic	SS	NA	2.5	Lymphoid hyperplasia	Partial thymectomy (VATS)	no	I	17	uneventful
Kim, 2003 (22)	43, F	Asymptomatic	SS, RA	NA	7	NA	Total thymectomy (median sternotomy)	no	I	11	uneventful
Kim, 1998 (21) <sup>†</sup>	72, F	Asymptomatic	no	NA	5	NA	Tumor resection (median sternotomy)	no	I	5	Uneventful
Kang, 2013 (20)	37, F	Cough	SS	A, G	11.8	NA	Extended thymectomy (median sternotomy)	no	I	14	Uneventful
Kamimura, 2002 (19)	55, F	Asymptomatic	NA	yes (no specific data)	12	NA	Tumor resection	no	NA	2	axillary lymph node metastasis
	47, F	Asymptomatic	SS	A	7	NA	Biopsy (VATS)	Chemotherapy (CHOP) + Radiotherapy	II	NA	NA
Isaacson, 1990 (18)	50, M	Hemoptysis	NA	NA	9	NA	Tumor resection (median sternotomy)	no	NA	48	Uneventful
Hu, 2017 (17)	42, F	Asymptomatic	SS		5.1	Thymoma	Total thymectomy (VATS)	NA	NA	9	uneventful
	41, F	Asymptomatic	SS	NA	2	Thymoma	Total thymectomy (VATS)	NA	NA	6	uneventful
Hirokawa, 2019 (16)	40, F	Asymptomatic	SS	G, A	4.9	Thymoma	Total thymectomy (VATS)	no	I	9	Uneventful

Table S1 (continued)

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Reference	Age, Sex	Symptom	Autoimmune disease	Hyperglobulinemia (Ig)	Tumor size	Suspected diagnosis	Surgery	Adjuvant therapy	Stage	Follow-up (month)	Outcome
Harigae, 2002 (15)	34, F	Asymptomatic	no	A	NA	Plasmacytic neoplasm	Tumor resection (median sternotomy)	no	NA	6	Uneventful
Go, 2011 (14)	68, M	NA	no	NA	5	NA	Tumor resection	no	I	15	Uneventful
	65, F	NA	SLE	NA	7	NA	Tumor resection	no	I	45	Uneventful
	63, M	NA	no	NA	6	NA	Tumor resection	no	II	3	Uneventful
	54, F	NA	no	NA	9	NA	Tumor resection	no	I	6	Uneventful
	69, M	NA	no	NA	4	NA	Tumor resection	no	IV	10	Uneventful
	58, F	NA	RA	NA	5	NA	Tumor resection	Chemotherapy (CVP)	II	60	Uneventful
Fujimoto, 2012 (13)	36, M	Asymptomatic	RA	NA	13.1	NA	Total thymectomy	no	I	48	Uneventful
Di Loreto, 1996 (12)	51, M	Asymptomatic	SS	NA	10	NA	Extended thymectomy	no	IV	12	Metastasis of skin
Covelli, 2012 (11)	42, F	Asymptomatic	SS	A	NA	NA	Total thymectomy	chemotherapy (RTX)	NA	NA	uneventful
Chen, 2020 (10)	57, M	Asymptomatic	no	M	11.3	NA	Tumor resection	CHOP	NA	NA	NA
Chen, 2014 (9)	11, F	Chest pain, fever, tachypnea	vasculitis	G, A, M	6.72	NA	Tumor resection	chemotherapy (NHL-BFM 90)	I	24	uneventful
Chang, 2012 (8)	53, F	Asymptomatic	SS	A, G	11.5	NA	Tumor resection (median sternotomy)	no	NA	6	Uneventful
	57, M	Chest discomfort		NA	7	NA	Tumor resection (median sternotomy)	no	NA	27	Uneventful
Braham, 2009 (7)	56, F	Asymptomatic	SS	poly	8	NA	Partial thymectomy (median sternotomy)	anti-CD20	NA	6	uneventful
Arai, 2017 (6)	66, F	Cough	SS	NA	2	Thymoma	Tumor resection (VATS)	no	I	NA	uneventful
	49, F	Asymptomatic	SS	NA	12	Thymic neoplasm	Total thymectomy (median sternotomy)	no	I	NA	uneventful

† Cases that may be repeatedly reported. NA, information not available; MG, myasthenia gravis; RA, rheumatoid arthritis; SS, Sjogren's syndrome; HT, Hashimoto's thyroiditis; SLE, systemic lupus erythematosus; CHOP: chemotherapy using cyclophosphamide, doxorubicin, vincristine and prednisone; RTX: rituximab; poly: polyclonal hyperglobulinemia; VATS: video-assisted thoracoscopic surgery; CVP: chemotherapy using cyclophosphamide, vincristine and prednisolone; R-CHOP: RTX + CHOP; R-CVP: RTX + CVP.