Supplementary Table 2: Variation in reported outcome definitions and measures between studies.

|  |  |
| --- | --- |
| **Reported Outcome**  | **Definitions/Measures**  |
| Symptom improvement or recurrence | Sustained relief of symptoms or dysphagia without the necessity for further medical intervention (Nicolas, Aumar et al. 2022; Delgado-Miguel, Amarnath et al. 2024)Presence (persistence or recurrence) of any symptom(s) post-intervention (patient and/or parent reported)(Emblem, Stringer et al. 1993, Avanoğlu and Mutaf 1996, Morris-Stiff, Khan R Fau - Foster et al. 1997, Tovar, Prieto et al. 1998, Hamza, Awad et al. 1999, Esposito, Mendoza-Sagaon et al. 2000, Karnak, Senocak et al. 2001, Patti, Albanese et al. 2001, Hussain, Thomas et al. 2002, Khan, Shah et al. 2002, Garzi, Valla et al. 2007, Askegard-Giesmann, Grams et al. 2009, Logan, Vossoughi et al. 2009, Corda, Pacilli et al. 2010, Tannuri, Tannuri et al. 2010, Hallal, Kieling et al. 2012, Ashraf, Kayani et al. 2014, Pachl, Rex et al. 2014, Erginel, Gun Soysal et al. 2016, Smits, van Lennep et al. 2016, Zagory, Golden et al. 2016, Grabowski, Korlacki et al. 2017, Vandewalle, Frye et al. 2018, Bahadır, Ergun et al. 2021, Idrissa, Oumarou et al. 2021, Jarzębicka, Czubkowski et al. 2021, Saiad, Idrissi Bahre et al. 2023)Eckardt score ≤3 and no need for further intervention (Wood, Chandler et al. 2020)Symptoms occurring daily, consistent with achalasia, interfering with quality of life (Meyer, Catto-Smith et al. 2017)Free of symptoms (success) or improvement (partial) (Jung, Michaud et al. 2010) Modified Visick symptom scale (Mattioli, Espocito et al. 2003) |
| Quality of life | PedsQL(Marlais, Fishman et al. 2011, Yu, Rosenfeld et al. 2019, Saiad, Idrissi Bahre et al. 2023)Kidscreen-52(Smits, van Lennep et al. 2016)Short Form Health Survey (SF-36)(Smits, van Lennep et al. 2016)Gastrointestinal PedsQL Symptoms Scales and Module(Saiad, Idrissi Bahre et al. 2023)Achalasia Severity Questionnaire(Yu, Rosenfeld et al. 2019, Jarzębicka, Czubkowski et al. 2021)Adult disease-specific quality of life assessment(Smits, van Lennep et al. 2016)Disease-specific quality of life for children with achalasia(Marlais, Fishman et al. 2011, Smits, van Lennep et al. 2016)Pediatric GORD Symptom and Quality of Life Questionnaire(Yu, Rosenfeld et al. 2019)“Impact on quality of life” assessed via questionnaire(Meyer, Catto-Smith et al. 2017) |
| Technical procedure success | Completion of Heller’s cardiomyotomy laparoscopically(Patti, Albanese et al. 2001, Chams Anturi, Romero Espitia et al. 2021, Provenzano, Pulvirenti et al. 2023) Completion of POEM without need for conversion to surgery(Wood, Chandler et al. 2020, Petrosyan, Mostammand et al. 2022, Samejima, Yoshimura et al. 2023)Ability to complete POEM procedure(Choné, Familiari et al. 2019, Nabi, Ramchandani et al. 2019, Liu, Wang et al. 2020) |
| Post-operative manometry  | Intra-operatively post-myotomy – change in LOS pressure(Yu, Rosenfeld et al. 2019)Routine at 1 month post-procedure – change in LOS pressure and IRP(Chen, Li et al. 2015)Routine at 3 months post-procedure – change in LOS pressure and IRP(Li, Tan et al. 2015)Routine at 6 months post-procedure – change in LOS pressure and IRP(Caldaro, Familiari et al. 2015, Provenzano, Pulvirenti et al. 2023)Routine at 12 months post-procedure – change in LOS pressure and IRP(Nabi, Ramchandani et al. 2016, Miao, Wu et al. 2018, Nabi, Ramchandani et al. 2019) Routine at 6 – 12 months and 5 – 15 years post-procedure – change in LOS and oesophageal pressure(Vaos, Demetriou et al. 2008)Routine post-procedure, time not specified – change in LOS pressure and IRP(Tovar, Prieto et al. 1998, Hamza, Awad et al. 1999, Esposito, Mendoza-Sagaon et al. 2000, Logan, Vossoughi et al. 2009, Nabi, Ramchandani et al. 2020)Screening in patients with symptoms(Avanoğlu and Mutaf 1996, Patti, Albanese et al. 2001, Garzi, Valla et al. 2007) |
| Post-operative contrast study | Post-operative to screen for a leak(Esposito, Mendoza-Sagaon et al. 2000, Ashraf, Kayani et al. 2014, Nabi, Ramchandani et al. 2019, Nabi, Ramchandani et al. 2020, Provenzano, Pulvirenti et al. 2023)Screening at 2 months post-procedure (>10 years old) or if symptomatic (<10 years old)(Provenzano, Pulvirenti et al. 2023)Screening between 1 and 5 months post-procedure(Karnak, Senocak et al. 2001)Screening in patients with symptoms(Emblem, Stringer et al. 1993, Morris-Stiff, Khan R Fau - Foster et al. 1997, Hamza, Awad et al. 1999, Garzi, Valla et al. 2007, Caldaro, Familiari et al. 2015, Vandewalle, Frye et al. 2018, Saiad, Idrissi Bahre et al. 2023, Delgado-Miguel, Amarnath et al. 2024)Screening at 6 months post-procedure(Esposito, Mendoza-Sagaon et al. 2000)Screening at 12 months post-procedure(Nabi, Ramchandani et al. 2019, Chams Anturi, Romero Espitia et al. 2021) Screening at 1, 3, 6 and 12 months post-procedure(Miao, Wu et al. 2018, Nabi, Ramchandani et al. 2020) Screening post-procedure, time not specified(Avanoğlu and Mutaf 1996, Lelli, Drongowski et al. 1997) Measurement of oesophageal diameter post-procedure(Vaos, Demetriou et al. 2008, Di Nardo, Rossi et al. 2012, Tan, Zhu et al. 2016)Measurement of height and width of barium column post-procedure(Khan, Shah et al. 2002)  |
| Post-operative pH study | Screening at 3 months post-procedure(Nabi, Ramchandani et al. 2019)Screening at 6 months post-procedure – abnormal if acid exposure time >6%(Provenzano, Pulvirenti et al. 2023)Screening at 6 months post-procedure - Boix-Ochoa score(Vaos, Demetriou et al. 2008)Screening post-procedure, time not specified(Avanoğlu and Mutaf 1996)Screening in patients with symptoms suggestive of GORD(Saliakellis, Thapar et al. 2017) |
| Post-operative endoscopy | Screening for complications at 24 – 48 hours post-procedure(Caldaro, Familiari et al. 2015) Screening for complications at 3 months post-procedure(Nabi, Ramchandani et al. 2019)Screening for complications 12 months post-procedure(Vaos, Demetriou et al. 2008, Nabi, Ramchandani et al. 2020, Petrosyan, Mostammand et al. 2022, Provenzano, Pulvirenti et al. 2023) Screening for complications at 3 and 12 months post-procedure(Samejima, Yoshimura et al. 2023)Screening for complications at 1, 3, 6 and 12 months post-procedure(Li, Tan et al. 2015, Tan, Zhu et al. 2016, Miao, Wu et al. 2018)Screening for complications if post-procedure Eckardt score >3(Wood, Chandler et al. 2020)Screening for complications in symptomatic patients(Avanoğlu and Mutaf 1996, Morris-Stiff, Khan R Fau - Foster et al. 1997, Saliakellis, Thapar et al. 2017)  |
| Development of GORD | DeMeester score on ambulatory pH monitoring(Nabi, Ramchandani et al. 2019, Nabi, Ramchandani et al. 2020)Distal oesophageal acid exposure time >6%(Provenzano, Pulvirenti et al. 2023)Diagnosis on pH study(Avanoğlu and Mutaf 1996, Tovar, Prieto et al. 1998, Patti, Albanese et al. 2001, Mattioli, Esposito et al. 2003, Corda, Pacilli et al. 2010, Caldaro, Familiari et al. 2015, Saliakellis, Thapar et al. 2017, Nicolas, Aumar et al. 2022)Diagnosis on endoscopy(Chen, Li et al. 2015, Samejima, Yoshimura et al. 2023) Patient-reported symptoms(Emblem, Stringer et al. 1993, Lelli, Drongowski et al. 1997, Hamza, Awad et al. 1999, Karnak, Senocak et al. 2001, Hussain, Thomas et al. 2002, Logan, Vossoughi et al. 2009, Pastor, Mills et al. 2009, Zhang, Xu et al. 2009, Tannuri, Tannuri et al. 2010, Pachl, Rex et al. 2014, Chen, Li et al. 2015, Nabi, Ramchandani et al. 2016, Grabowski, Korlacki et al. 2017, Yu, Rosenfeld et al. 2019, Wood, Chandler et al. 2020, Chams Anturi, Romero Espitia et al. 2021, Idrissa, Oumarou et al. 2021)GerdQ assessment(Liu, Wang et al. 2020)Reflux Disease Questionnaire(Smits, van Lennep et al. 2016) |
| Development of dysphagia | Reported by patient(Avanoğlu and Mutaf 1996, Hamza, Awad et al. 1999, Vaos, Demetriou et al. 2008, Logan, Vossoughi et al. 2009, Pastor, Mills et al. 2009, Tannuri, Tannuri et al. 2010, Chams Anturi, Romero Espitia et al. 2021, Saiad, Idrissi Bahre et al. 2023) Contrast study(Karnak, Senocak et al. 2001, Mattioli, Esposito et al. 2003, Esposito, Riccipetitoni et al. 2013)Endoscopy(Karnak, Senocak et al. 2001) |
| Development of oesophagitis  | Los Angeles classification(Nabi, Ramchandani et al. 2016, Tan, Zhu et al. 2016, Choné, Familiari et al. 2019, Nabi, Ramchandani et al. 2019, Nabi, Ramchandani et al. 2020, Samejima, Yoshimura et al. 2023)Savary-Miller criteria(Vaos, Demetriou et al. 2008)Appearance at endoscopy not otherwise specified(Avanoğlu and Mutaf 1996) |
| Time/delay to diagnosis | Time from start of symptoms to initial treatment(Vaos, Demetriou et al. 2008, Saliakellis, Thapar et al. 2017)Time from start of symptoms to diagnosis(Illi and Stauffer 1994, Tannuri, Tannuri et al. 2010, Saiad, Idrissi Bahre et al. 2023) |
| Patient satisfaction | Subjective assessment of outcome (patient pleased with outcome)(Vaos, Demetriou et al. 2008)Subjective ranking of outcome (excellent, good, fair, poor)(Lelli, Drongowski et al. 1997) |

GORD – gastro-oesophageal reflux disease, POEM – per oral endoscopic myotomy, LOS – lower oesophageal sphincter, IRP – integrated relaxation pressure.

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