

Supplementary Table 1 Results of success follow-up and essential information of corresponding patients

No.	Sex	Age	Year	FB	Site	Dur.	Perforation	DM	HP(*)
1	female	78	2012	jujube pit	upper	5h	No	No	No
2	male	44	2012	boney FB	upper	24h	No	No	No
3	female	38	2012	jujube pit	upper	6h	No	No	No
4	male	28	2012	fish bone	mid	24h	No	No	No
5	female	81	2012	jujube pit	upper	24h	No	No	No
6	female	35	2013	metal	mid	16h	Yes	No	No
7	male	39	2014	chicken bone	mid	24h	No	No	No
8	female	52	2015	jujube pit	mid	10h	No	No	No
9	female	43	2015	fish bone	upper	24h	No	No	No
10	female	63	2015	jujube pit	mid	14h	No	No	Yes(30)
11	female	52	2015	jujube pit	upper	6h	No	No	Yes(2)
12	male	52	2016	jujube pit	upper	5h	No	No	No
13	female	61	2016	jujube pit	upper	7h	No	No	No
14	female	64	2017	jujube pit	upper	6h	No	No	Yes(2)

* years of hypertension

Dur. duration; FB, foreign body; DM, diabetes mellitus; HP, hypertension

n=4, the cases loss to follow-up, essential information of corresponding patients are listed in *Supplementary Table 3*.

Supplementary Table 2 Details of patients with esophageal perforation

No.	Sex	Age	Year	FB	Site	Dur.	Evidence
1	female	61	2012	jujube pit	mid	7d	contrast esophagography (CEG)
2	female	52	2012	jujube pit	upper	2d	direct viewing
3*	female	79	2012	jujube pit	NA	3d	computed tomography (CT)
4	female	71	2012	pig bone	upper	17h	direct viewing
5	male	57	2012	cullet	mid	24h	CT
6	female	77	2012	jujube pit	mid	4d	direct viewing
7	male	77	2012	chicken bone	mid	2d	direct viewing/CT
8	female	50	2012	jujube pit	upper	5h	CT/ barium meal
9	female	35	2013	metal	mid	16h	CT/CEG
10	female	57	2013	jujube pit	mid	12h	CEG
11	male	29	2013	chicken bone	mid	5d	CT
12	male	44	2013	denture	lower	5d	direct viewing
13	male	44	2013	duck bone	upper	24h	CT/direct viewing
14	female	27	2014	duck bone	mid	6d	direct viewing
15	male	49	2014	chicken bone	mid	2d	direct viewing
16	female	59	2014	jujube pit	upper	3d	CT/direct viewing
17	male	64	2014	jujube pit	upper	7d	CT
18	female	59	2014	egg shell	upper	3d	direct viewing
19	male	84	2015	jujube pit	mid	52h	direct viewing/CT
20	male	79	2015	jujube pit	mid	5d	CEG / barium meal
21	female	64	2015	jujube pit	upper	7d	direct viewing
22	male	42	2015	ox bone	lower	3d	CT/direct viewing
23*	female	70	2015	fish bone	mid	12h	direct viewing
24	male	83	2015	jujube pit	mid	3d	CT/ direct viewing
25	female	21	2015	duck bone	mid	2d	CT/direct viewing
26	male	69	2015	jujube pit	mid	4d	direct viewing
27	male	84	2015	denture	mid	60h	direct viewing
28	male	58	2015	denture	mid	24h	direct viewing
29	female	64	2015	jujube pit	upper	5d	direct viewing/ CEG
30	female	77	2016	jujube pit	mid	6d	direct viewing/ CEG
31	male	59	2016	fish bone	mid	24h	direct viewing/ CT
32	male	45	2016	jujube pit	mid	24h	CT/ direct viewing
33	female	75	2016	jujube pit	upper	24h	CT
34	female	49	2017	fish bone	mid	24h	direct viewing
35	female	69	2017	jujube pit	upper	10d	direct viewing

*, excluded case due to without complete data.

Dur., duration of foreign bodies; CT

Supplementary Table 3 Details of patients excluded from STUDY POPULATIONS

No.	Sex	Age	Symptom	Temp.	H./weight	DM	HBP	FB type	Dur.	Site	Perforation	Cause
1	female	61	NA	NA	158/63	yes	no	<i>jujube pit</i> *	NA	NA	NA	Unconfirmed diagnosis
2	male	36	dysphagia/ odynophagia	NA	175/75	no	no	<i>duck bone</i> *	4h	NA	NA	Unconfirmed diagnosis
3	female	67	dysphagia/ odynophagia	36.7	160/50	yes	no	jujube pit	15d	upper	NA	Unconfirmed perforation
4	female	22	FB sensation/ dysphagia	38.9	150/65	no	no	jujube pit	3d	upper	NA	Unconfirmed perforation
5	male	66	chest pain	36.9	175/73	no	no	fish bone	4d	NA	NA	Unconfirmed perforation
6 [†]	female	79	dysphagia/ odynophagia	38.3	165/55	NA	NA	jujube pit	3d	NA	yes	Case with missing data
7	female	62	NA	NA	163/60	no	yes	food remnants	NA	lower	no	Case with missing data
8	female	69	chest pain	36.3	170/NA	no	yes	jujube pit	5d	mid	no	Case with missing data
9 [†]	male	27	dysphagia/ odynophagia	36.6	160/65	NA	NA	cullet	2d	mid	no	Case with missing data
10	female	70	chest pain	36.7	NA/70	no	yes	fish bone	12h	mid	yes	Case with missing data
11 [†]	male	61	dysphagia/ odynophagia	36.4	167/61	NA	NA	jujube pit	3d	upper	no	Case with missing data
12 [†]	female	37	dysphagia/ odynophagia	36.6	160/50	NA	NA	duck bone	24h	upper	no	Case with missing data

* , unconfirmed FBs

[†] the cases without information on history of diseases and loss to follow-up

NA, Not Available; Temp., temperature; H. height; DM, diabetes mellitus; HP, hypertension; Dur., duration of foreign bodies

Supplementary Table 4 Analysis for group jujube pits

Variables	Total cohort	EFB without Perforation	EFB with Perforation	P Value	OR(95% CI)
<i>N (%)</i>	156	139(89.1)	17(10.9)		
<i>Temp.(M)</i>	36.7	36.6	37.4	0.001	
IQR	36.5-36.9	36.5-36.8	36.8-37.8		
>37.3℃	22	12	10	<0.001	14.62(4.19-54.88)
<i>Duration(M)</i>	16.5	13	96	<0.001	-
IQR	8.0-37.5	8-24	48-144		
>24 hours	40	27	13	<0.001	13.18(3.70-59.92)
<i>symptoms</i>					
FB sensation	54	53	1	0.008	0.007(0.002-0.697)
chest pain	7	4	3	0.029	7.06 (0.94-46.61)
<i>Site*</i>				-	-
Upper	100	92	8		
Mid	54	45	9		
Lower	2	2	0		
<i>Diabetes</i>	11	6	5	<0.001	8.99(1.88-41.70)

Temp. temperature; M, median; IQR, interquartile range; FB, foreign body; EFB, esophageal foreign body; OR, odds ratios; CI, confidence interval

* Upper, ≤ 18 cm from incisor; Mid, > 18 cm and ≤ 32 cm from incisor; Lower, > 32 cm from incisor

Inclusion in analysis

Detailed information about inclusion and exclusion is mentioned in METHODS and shown in

Figure 1. Twelve patients had to be excluded from STUDY POPULATIONS for three main reasons:

- A. *Unconfirmed diagnosis:* Diagnosis of "EFB" is shown in the final diagnosis in two cases, but lacked detailed information on EFB such as symptom, diagnosis, treatment. The first patient was a 71-year-old female, who tumbled forwards and fractured her left patella on the way to hospital due to EFB. The second, a 36-year-old male, was discharged within 24 hours without any examination because of discrepancies in medical insurance information.
- B. *Unconfirmed perforation:* Three cases lacked sufficient evidence to judge whether complicated by perforation. The first, a 67-year-old female, with "not rule out the possibility of perforation" mentioned in surgical record, but no further postoperative examination was performed to confirm the presence of perforation. The second patient was a 22-year-old female with mental retardation, who was under suspicion of esophageal perforation due to persistent fever and leukocytosis after gastroscopy, although no clear perforation was found. However, further examination to determine whether complicated by perforation was refused. The last, a 66-year-old male, thoracotomy was underwent directly in the case of without any examination to prove the presence of perforation to remove FB, and whether complicated by perforation was not recorded in surgical record.
- C. *No completed data available:* There were 7 cases without complete data for analysis, more details were listed in **Supplementary Table 3**. A 62-year-old female patient with a history of achalasia for 44 years, diagnosed with EFB based on food remnants in lower esophagus was found and cleared for twice when she underwent peroral endoscopic myotomy by

endoscopy. In this case, unable to assess the duration of EFB since persistent dysphagia are caused by achalasia.