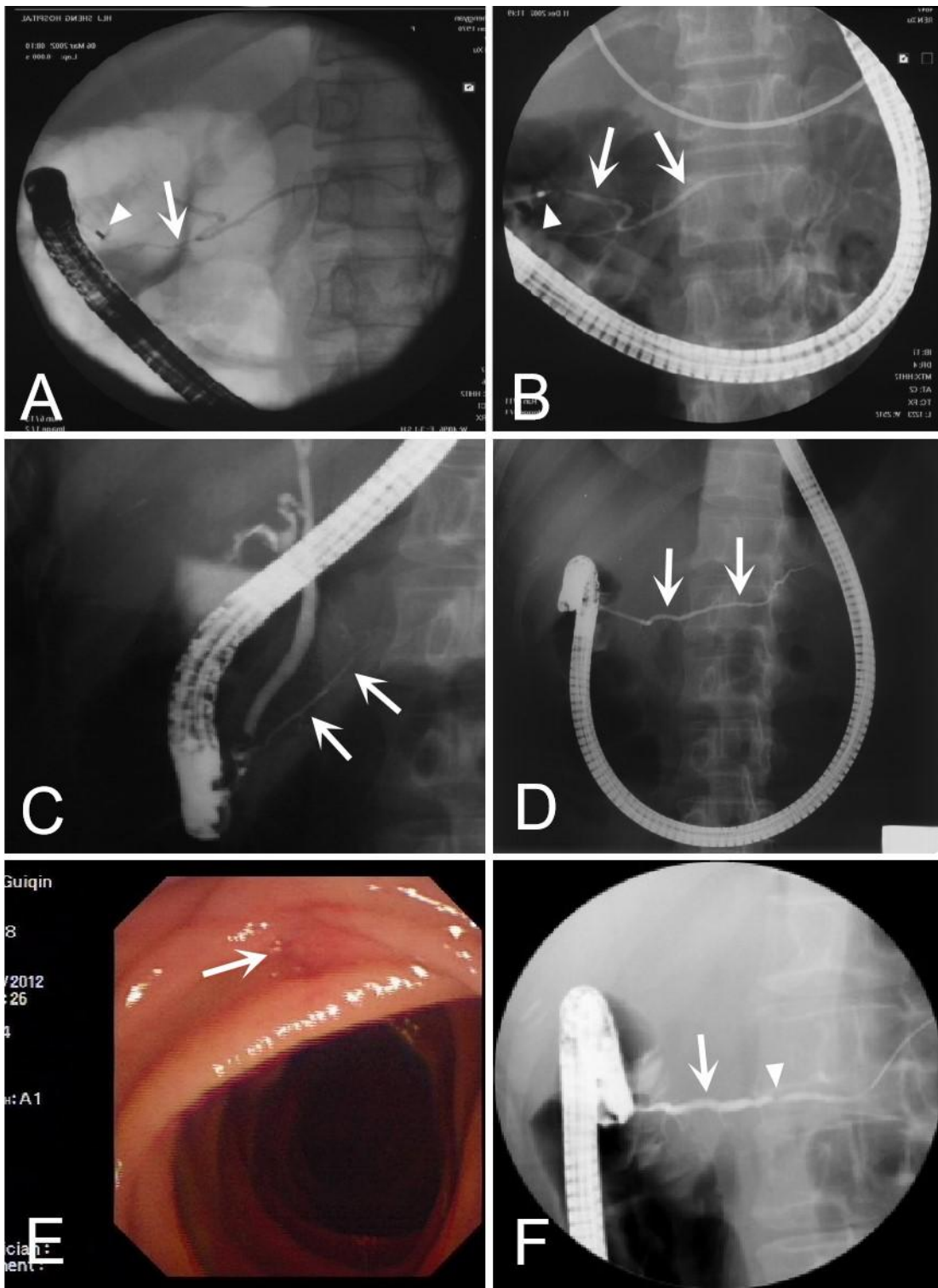
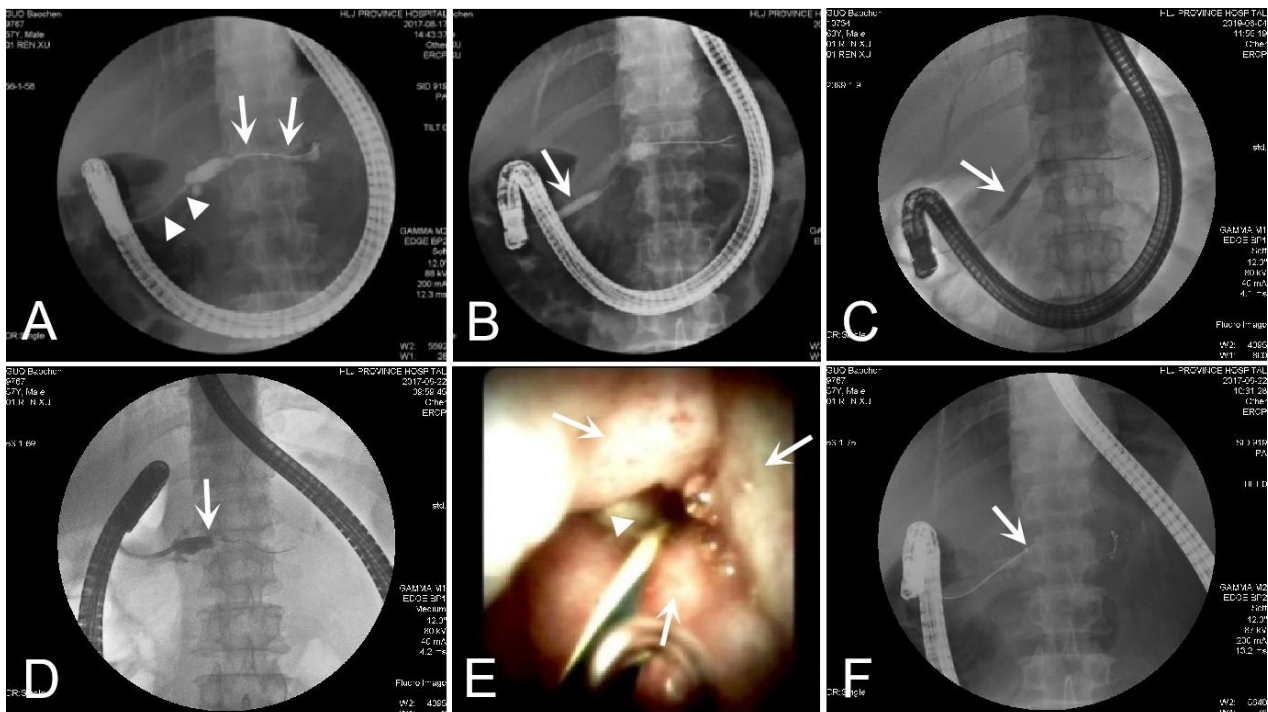


Supplementary Figure 1 Minor papilla endotherapy for multiple pancreatic stones in the main pancreatic duct associated with a pancreatic pseudocyst in a patient with symptomatic chronic pancreatitis. **A:** Magnetic resonance cholangiopancreatography shows dilation of the main pancreatic duct (MPD; arrowhead) and a pancreatic pseudocyst (arrow); **B:** Computed tomography (CT) scan display the pseudocyst (arrow); **C:** Pancreatography shows a communicating branch (arrowhead) between the MPD and the pseudocyst (arrow); **D:** Endoscopic minor papillotomy is being performed with a pull-type papillotome (arrow), with the main papilla visible at the distal end (arrowhead); **E:** A guidewire is entering the cyst cavity; **F:** An 8.5 Fr stent is placed, with turbid fluid draining out (arrow); **G:** 3 months later CT scan shows multiple pancreatic stones in the head and body of the MPD (arrow), and the pseudocyst is resolved; **H:** Balloon expansion of the minor papilla and accessory pancreatic duct with a 6 mm balloon (arrow); **I:** Duodenoscopy shows a large pancreatic stone (arrow) being retrieved with a basket.



Supplementary Figure 2 Pancreatic ductography and/or endoscopic imaging before endoscopic minor papillotomy, and before and after endoscopic minor papillotomy, respectively, in two patients. A and B: Patient one with type 1 incomplete pancreas divisum with ventral pancreatic duct stricture was followed up for 20 years during which there was no recurrent abdominal pain after endoscopic minor papillotomy

(EMP). Pancreatography *via* major papilla cannulation (arrowhead) shows fusion of the extreme end of the upper branch (arrow) of a very thin ventral pancreatic duct with the dorsal pancreatic duct (A), and Pancreatography *via* minor papilla cannulation (arrowhead) shows overall mild dilation of the dorsal pancreatic duct (arrow), pancreatic body duct diameter (2.7 mm), and minor papilla stricture without signs of chronic pancreatitis (B); C-F: Patient two with complete pancreas divisum with pancreatic-type pain developed minor papilla stricture 11 years after EMP. Pancreatography *via* major papilla shows a short ventral pancreatic duct (arrowhead) with tree-branch like end (arrowhead; C), and Pancreatography *via* the minor papilla shows mild dilation of the dorsal pancreatic duct (2.6mm) (arrow) and smooth duct wall without findings of chronic pancreatitis (D); Duodenoscopy shows narrowing of the minor papilla (arrow; E) and pancreatography imaging shows dilation of the dorsal duct (4 mm; arrow), a ductal stricture (arrowhead) with over 3 dilated branch ducts, indicating chronic pancreatitis 11 years after EMP (F).



Supplementary Figure 3 Pancreatography showing a *de novo* long segment stricture developed in the upstream main pancreatic duct (MPD) in a patient 6 months after 7 Fr double stent placement, side by side, for dilation of strictures in the accessory

pancreatic duct and the downstream main pancreatic duct through the minor papilla.

A: Pancreatography shows a downstream main pancreatic duct (MPD) stricture (arrowheads) and a developed de novo long segment stricture in the upstream MPD (arrows); B and C: X-ray images show segmental dilation of the stricture of the downstream MPD with a 6 mm balloon (arrow); D: SpyGlass DS reaches the site of the new stricture in the upstream MPD (arrow); E: SpyGlass shows a guidewire passing through the narrowed duct lumen (arrowhead), with inflammatory thickening of the duct wall and local smoothness (arrows); F: X-ray shows the forceps (arrowhead) taking a biopsy at the site of the stricture.

Supplementary Table 1 Baseline characteristics of the 16 patients with pancreatic stones

Characteristics	Value (%)
<i>Location of stone</i>	
Relation to the pancreatic ducts	
MPD	14 (87.5)
Dorsal duct	2 (12.5)
Relation to the pancreatic position	
Head	4 (25.0)
Body	3 (18.8)
Both	9 (56.3)
Number of stone	
Single	6 (37.5)
Multiple	10 (62.5)
Stones size (mm)	
< 5	2 (12.5)
5-9	9 (56.3)
≥ 10	5 (31.3)
Density at X-ray of stone	
Radiopaque	12 (75.0)

MPD: Main pancreatic duct.

Supplementary Table 2 Potential influencing factors for endoscopic minor papilla intervention associated post-ERCP pancreatitis

Variables	Categorization	PEP	Non-PEP	<i>P</i> value
Gender (<i>n</i> = 43)				
	Male (<i>n</i> = 31)	3 (9.7)	28 (90.3)	0.6077
	Female (<i>n</i> = 12)	2 (16.7)	10 (83.3)	
Age (years) (<i>n</i> = 43)				
	≤ 50 (<i>n</i> = 23)	4 (17.4)	19 (82.6)	0.3508
	> 50 (<i>n</i> = 20)	1 (5.0)	19 (95.0)	
Incision of the minor papilla (<i>n</i> = 39)				
	Free-hand NKPMP (<i>n</i> = 11)	3 (27.3)	8 (72.7)	0.1252
	Conventional EMP (<i>n</i> = 28)	2 (7.2)	26/ (92.8)	
Balloon dilation (<i>n</i> = 38)				
	Yes (<i>n</i> = 9)	1 (11.1)	8(88.9)	1.0000
	No (<i>n</i> = 29)	4(13.8)	25(86.2)	
Pancreas divisum (<i>n</i> = 43)				
	Yes (<i>n</i> = 10) ¹	3 (30.0)	7 (70.0)	0.0733
	No (<i>n</i> = 33)	2 (6.1)	31 (93.9)	
Pancreatic duct stenting (<i>n</i> = 37)				
	Yes (<i>n</i> = 30)	3 (10.0)	27 (90.0)	0.2330
	No (<i>n</i> = 7)	2 (28.6)	5 (71.4)	

¹Including one case with pancreaticobiliary maljunction and pancreas divisum and one with intraductal papillary mucinous neoplasm and pancreas divisum.

Data are expressed as *n* (%). PEP: Post-endoscopic retrograde cholangiopancreatography pancreatitis; NKPMP, needle knife precut minor papillotomy; EMP: Endoscopic minor papillotomy.