

## REFERENCE

### I. Percutaneous Transvenous Mitral Commissurotomy: PTMC (Mitral Valvuloplasty)

- 1) Inoue K, Owaki T, Nakamura T, Kitamura F, Miyamoto N : Clinical application of transvenous mitral commissurotomy by a new balloon catheter. *J. Thorac. Cardiovasc. Surg.* 87(3):394-402, 1984.  
2) Inoue K, Nakamura T, Kitamura F, Miyamoto N : Transvenous mitral commissurotomy by a new balloon catheter. *Eur. Heart J.* 5(Suppl 1):111, 1984(abst.)  
3) Inoue K, Owaki T, Nakamura T, Kitamura F, Miyamoto N, Chen CR : Transvenous mitral commissurotomy : Long term Follow-up and recent modification. *Circulation* 74(Supp II): II-208, 1986(abst.)  
4) Inoue K, Hung JS, Chen CR, Cheng TO : Mitral stenosis : Inoue Balloon Catheter technique. *Percutaneous Balloon Valvuloplasty*, ed. by Cheng TO, Igakushoin, 237-279, 1992.  
5) Inoue K, Hung JS : Percutaneous transvenous mitral commissurotomy (PTMC) : The far east experience. *Textbook of Interventional Cardiology*, ed. by E.J. Topol, W.B. Saunders Company, 887-899, 1990.  
6) Inoue K, Chen CR, Hung JS : Percutaneous transvenous mitral commissurotomy guided and assessed by echocardiography. *Echocardiography in Cardiac Interventions*, ed. by Cikes I, Kluwer Academic Publishers, 67-76, 1989.  
7) Feldman T, Carroll JD : Valve deformity and balloon mechanics in percutaneous transvenous mitral commissurotomy. *Am. Heart J.* 121(6):1628-1633, 1991.  
8) Tsai RC, Yamaji T, Ishibashi M, Takaku F, Fu M, Cherng W J, Inoue K, Hung JS : Atrial natriuretic peptide and vasopressin during percutaneous transvenous mitral valvuloplasty and relation to renin-angiotensin-aldosterone system and renal function. *Am. J. Cardiol.* 65:882-886, 1990.  
9) Hung JS, Fu M, Cherng WJ, Inoue K, Tsai RC, Ishibashi M, Yamaji T : Rapid fall in elevated plasma atrial natriuretic peptide levels after successful catheter balloon valvuloplasty of mitral stenosis. *Am. Heart J.* 117 (2):381-385, 1989.  
10) Nobuyoshi M, Hamasaki N, Kimura T, Nosaka H, Yokoi H, Yasumoto H, Horiuchi H, Nakashima H, Shindo T, Mori T, Miyamoto A, Inoue K : Indications, complications, and short-term clinical outcome of percutaneous transvenous mitral commissurotomy. *Circulation* 80(4):782-792, 1989.  
11) Chen CR, Lo ZX, Huang ZD, Inoue K, Cheng TO : Percutaneous transseptal balloon mitral valvuloplasty: The Chinese experience in 30 patients. *Am. Heart J.* 115(5):937-947, 1988.  
12) Matsuura Y, Fukunaga S, Ishihara H, Hamanaka Y, Sueda T, Kajiyama G, Matsuura H, Okamoto M, Inoue K : Mechanics of percutaneous balloon valvotomy for mitral valvar stenosis. *Heart Vessels* 4:179-183, 1988.  
13) Orihashi K, Matsuura Y, Ishihara H, Hamanaka Y, Kawae Y, Sueda T, Kanehiro K, Nomimura T, Okamoto M, Tsuchioka Y, Inoue K : Transvenous mitral commissurotomy examined with transesophageal echocardiography. *Heart Vessels* 3:209-213, 1987.  
14) Macaya C, Banuelos C, Fernández-Ortiz A, Rodrigo JL, Cortés J, L' niguez A, Alfonso F, Inoue K, Zarco P : Valvulotomía mitral percutánea con la técnica de Inoue. *Rev. Esp. Cardiol.* 43:371-376, 1990.  
15) Hung JS : Mitral stenosis with left atrial thrombi : Inoue Balloon Catheter technique. *Percutaneous Balloon Valvuloplasty*, ed. by Cheng TO, Igakushoin, 280-293, 1992.  
16) Hung JS, Chern MS, Wu JJ, Fu M, Yeh KH, Wu YC, Cherng WJ, Chua S, Lee CB : Short and long-term results of catheter balloon percutaneous transvenous mitral commissurotomy. *Am. J. Cardiol.* 67:854-862, 1991.  
17) Hung JS, Fu M, Yeh SJ, Lin FC, Cherng WJ, Yeh KH, Wu YC, Wu D : Hemodynamic and clinical efficacies of catheter balloon percutaneous transvenous mitral commissurotomy : Experience of 100 patients with rheumatic mitral stenosis. *J. Formosan. Med. Assoc.* 89(3): 182-189, 1990.  
18) Hung JS, Lin FC, Chiang CW : Successful percutaneous transvenous catheter balloon mitral commissurotomy after warfarin therapy and resolution of left atrial thrombus. *Am. J. Cardiol.* 64:126-128, 1989.  
19) Tsai LM, Hung JS, Chen JH, Lin LJ, Fu M : Resolution of left atrial appendage thrombus in mitral stenosis after warfarin therapy. *Am. Heart J.* 121(4)part 1:1232-1234, 1991.  
20) Chen CR, Hu SW, Chen JY, Zhou YL, Mei J, Cheng TO : Percutaneous mitral valvuloplasty with a single rubber-nylon balloon (Inoue-Balloon) : Long-term results in 71 patients. *Am. Heart J.* 120(3):561-568, 1990.  
21) Chen CR, Huaug ZD, Lo ZX, Cheng TO : Comparison of single rubber-nylon balloon and double polyethylene balloon valvuloplasty in 94 patients with rheumatic mitral stenosis. *Am. Heart J.* 119(1):102-111, 1990.

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# INOUE-BALLOON



**For Percutaneous Transvenous Mitral Commissurotomy  
(PTMC)**

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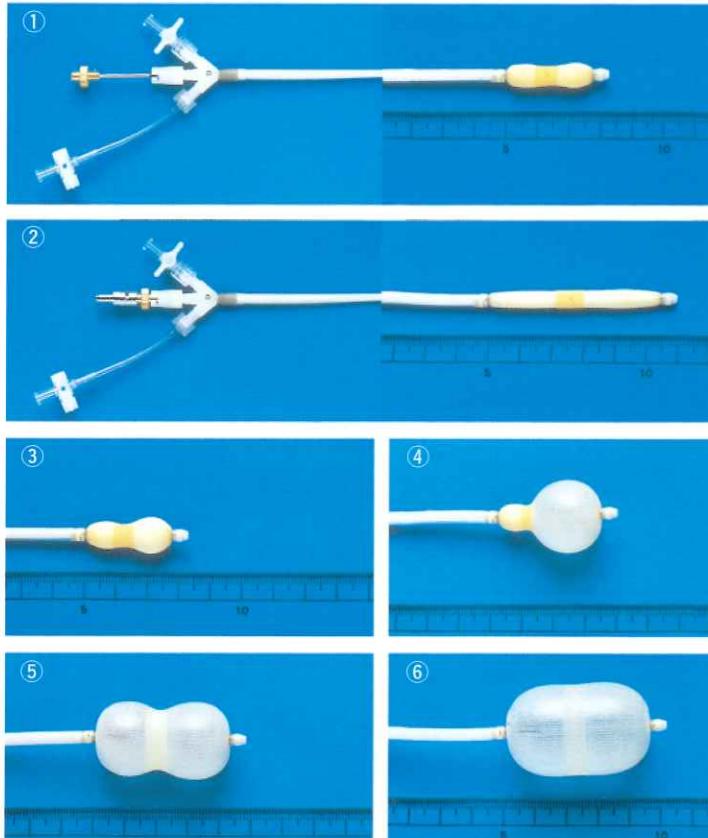
# INOUE-BALLOON Permits

## Safe Percutaneous Transvenous Mitral Commissurotomy (PTMC)



**The first balloon catheter for the treatment of mitral stenosis has the following simple operative procedures :**

### Simple Operative Procedure:



- ① Original shape.
- ② Introduce the balloon stretching tube to slenderize and elongate the balloon.
- ③ Inflate the distal portion of the balloon slightly (10-15mm) with dilute contrast medium.
- ④~⑥ The balloon inflates in three stages.

### Advantages:

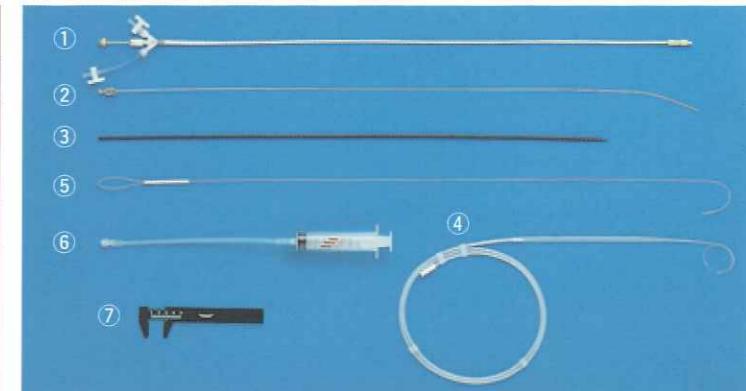
- (1) A single balloon catheter provides a sufficient expansion range to assure a simple as well as safe procedure.
- (2) The low profile of the stretched balloon facilitates percutaneous introduction through the femoral vein. This technique prevents the development of atrial septal defect (ASD). (photo-②)
- (3) Changing the shape of the balloon with the filling volume simplifies placing the catheter at the site of stenosis (photo-③). The volume controlled hour-glass shape of the balloon assures proper positioning at the stenosis, prevents migration of the catheter and provides optimal dilation (photo-④, ⑤, ⑥)
- (4) The range of each balloon size is controlled by the volume of dilute contrast medium. (See table).

Cat. No.	Balloon diameter range
PTMC-30, IMS-30	26mm ~ 30mm
PTMC-28, IMS-28	24mm ~ 28mm
PTMC-26, IMS-26	22mm ~ 26mm
PTMC-24, IMS-24	20mm ~ 24mm
PTMC-22, IMS-22	20mm ~ 22mm
PTMC-20, IMS-20	18mm ~ 20mm

- (5) The unique balloon construction exhibits dynamic inflation properties sufficient for valvular expansion. Rapid inflation/deflation cycle (5sec.) quickly returns valve to normal function.
- (6) This treatment (PTMC) is performed without thoracotomy with the following special features:  
-Short procedure time -Short hospital stay -Can be indicated for the debilitated elderly, patients with renal insufficiency; pregnant women; patients with poor surgical risk.

### Set Contents

Description	Use
① Inoue Balloon Catheter	Dilation of mitral valve
② Balloon stretching tube	Elongation of balloon
③ Dilator	Dilation of insertion areas
④ Guidewire	Guiding the balloon catheter and dilator
⑤ Stylet (spring)	Directing balloon to mitral valve
⑥ Syringe	Inflation of balloon
⑦ Ruler	Measurement of balloon diameter



### SPECIFICATION

#### INOUE-BALLOON

Cat. No.	Balloon Diameter (Max)	Catheter Size		Patient Height
		Outer Diameter	Length	
PTMC-30, IMS-30	30mm	12Fr.	70cm	> 180cm
PTMC-28, IMS-28	28mm	12Fr.	70cm	> 160cm
PTMC-26, IMS-26	26mm	12Fr.	70cm	> 147cm
PTMC-24, IMS-24	24mm	12Fr.	70cm	≤ 147cm
PTMC-22, IMS-22	22mm	12Fr.	70cm	≤ 147cm
PTMC-20, IMS-20	20mm	12Fr.	70cm	≤ 147cm

\* IMS-30, IMS-28, IMS-26, IMS-24, IMS-22, IMS-20, contains balloon catheter and syringe only.

● Package: 1 set/case      ● EOG sterile

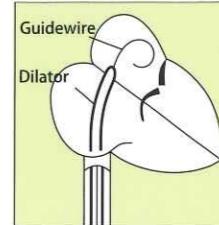
### Individually supplied as follows

Cat. No.	Description	Size	
		Outer Diameter	Length
KMS-1	Balloon stretching tube	1.2mm	80cm
DMS-1	Dilator	14Fr.	70cm
GMS-1	Guidewire	.025"	175cm
SMS-1	Stylet	.038"	80cm
Cat. No.	Description	Degree of accuracy	
		Measurement range	± 0.5mm
NMS-1	Ruler	0mm ~ 40mm	

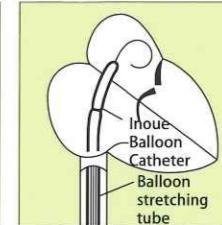
● Package: 2 Units/case      ● EOG sterile

### Indication and Directions for Use:

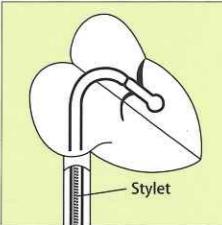
- Mitral valve stenosis
- Directions for Use (Summary)



① After inserting the guidewire into the left atrium, expand atrial septal puncture with the dilator.



② Insert the balloon catheter with the balloon stretching tube incorporated.



③ Place the balloon at the valvular opening using the stylet.

④ Inflate the distal portion of the balloon to place it at the valvular opening.

⑤ Inflate the entire balloon to expand the opening of the valve.

Note 1: For details, read package insert (in the kit box)

Note 2: This procedure should be carried out only by physicians trained and qualified in PTMC techniques.

Note 3: Use of this procedure is recommended only in facilities where cardiac surgery can be performed within a reasonable period of time.