

# Intelligent autonomous treatment of bedwetting using non-invasive wearable advanced mechatronics systems and MEMS sensors -Supplementary Materials-

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## 1 Bladder expansion

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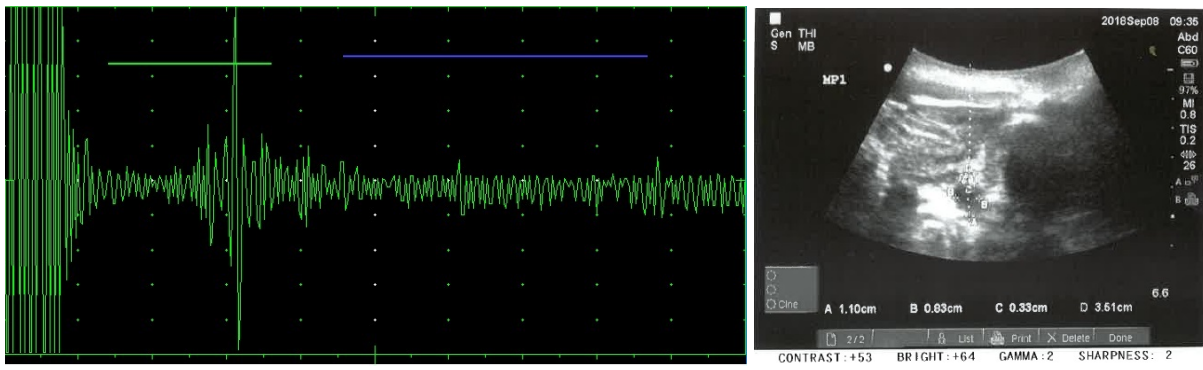


Fig. 1: Volunteer MP1.

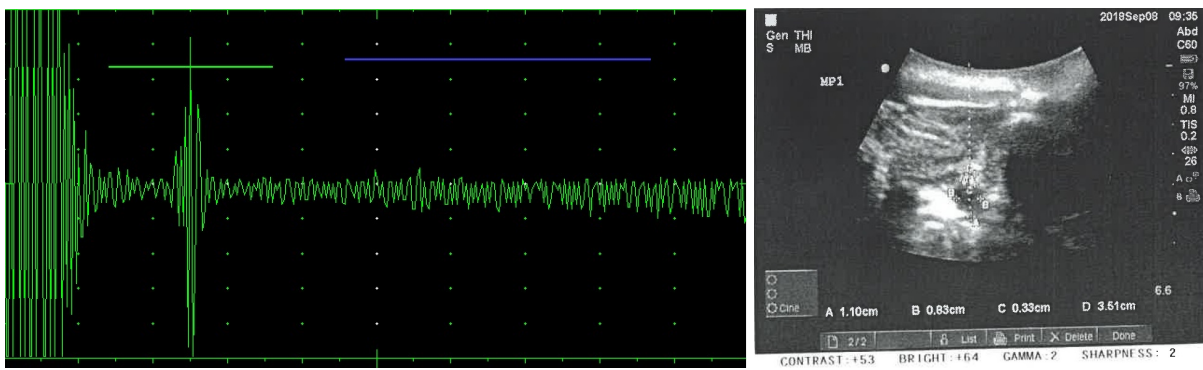


Fig. 2: Volunteer MP1.

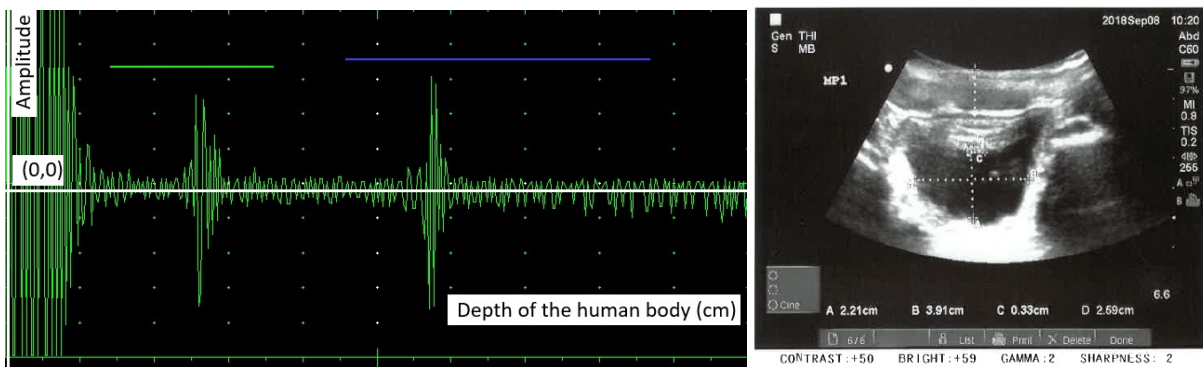


Fig. 3: Volunteer MP1.

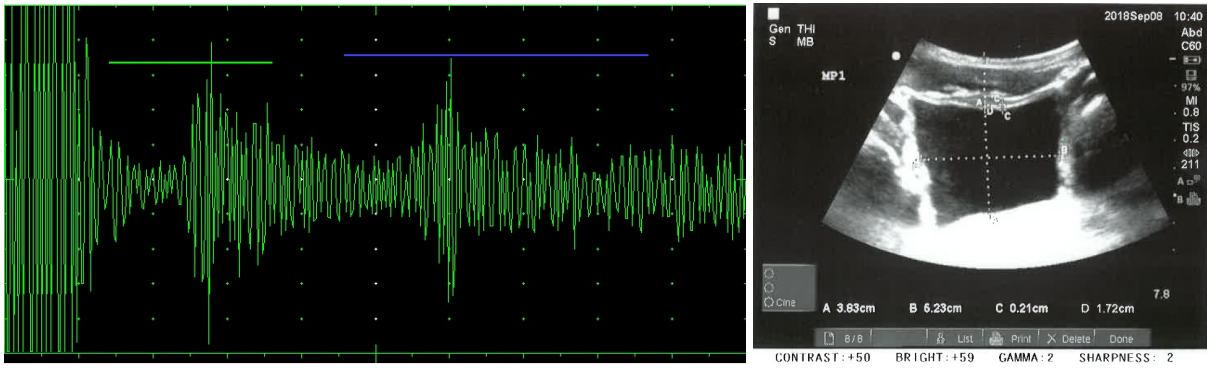


Fig. 4: Volunteer MP1.

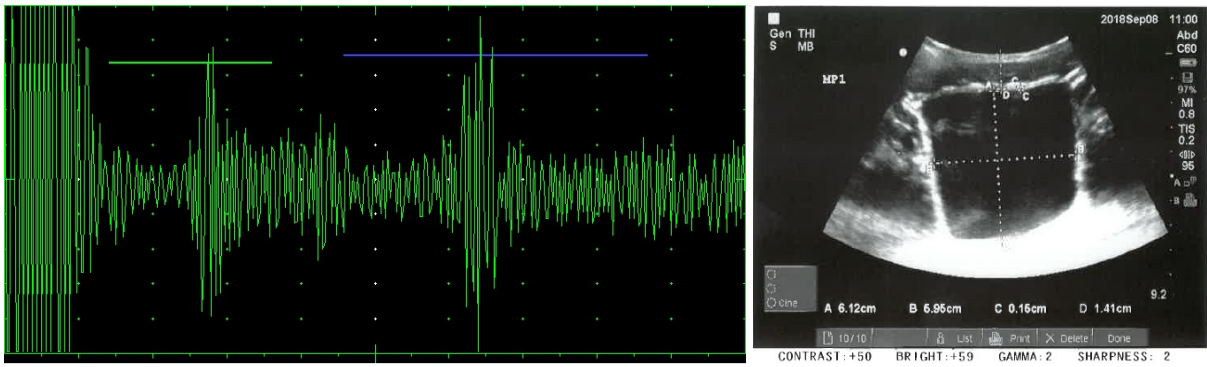


Fig. 5: Volunteer MP1.

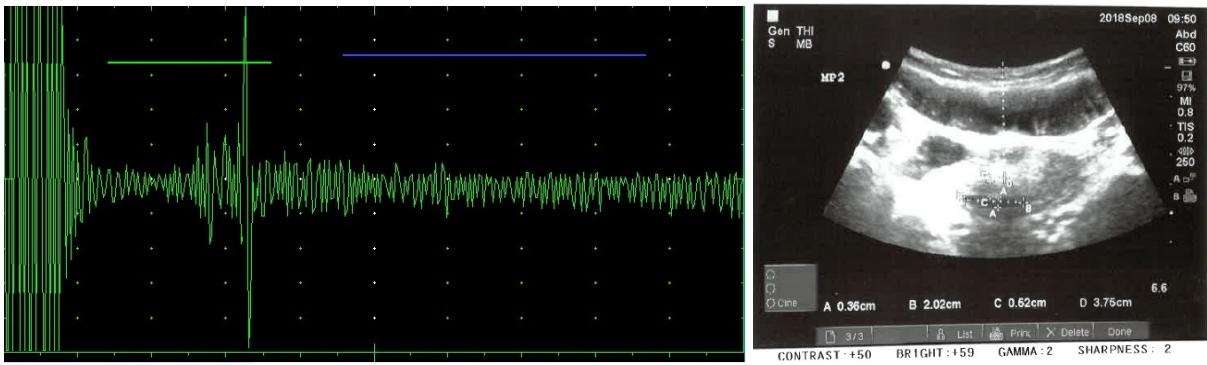


Fig. 6: Volunteer MP2.

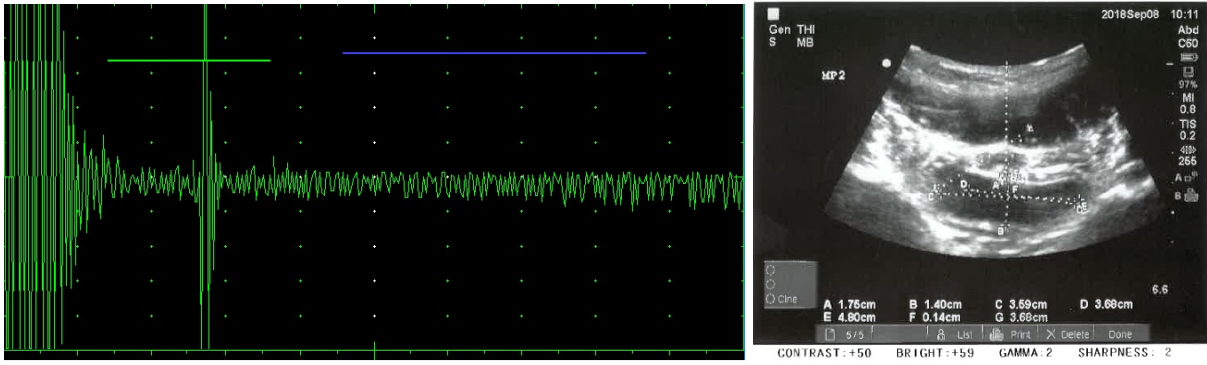


Fig. 7: Volunteer MP2.

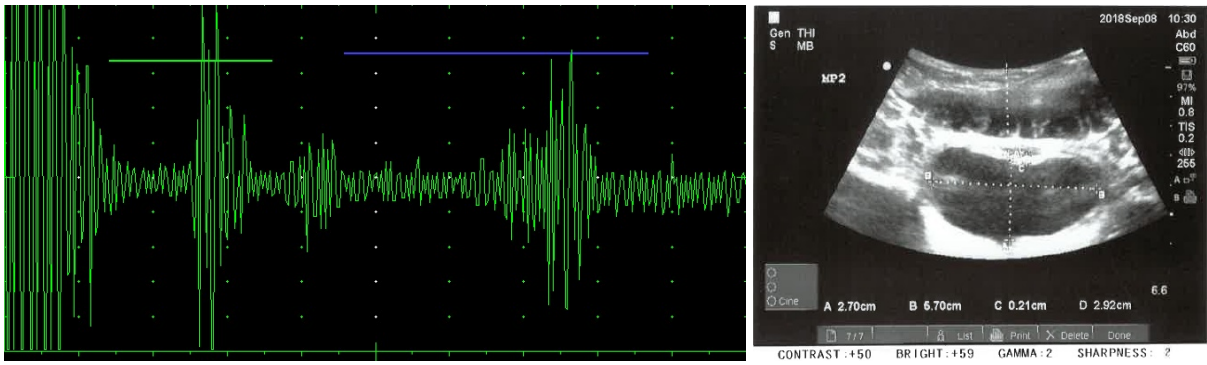


Fig. 8: Volunteer MP2.

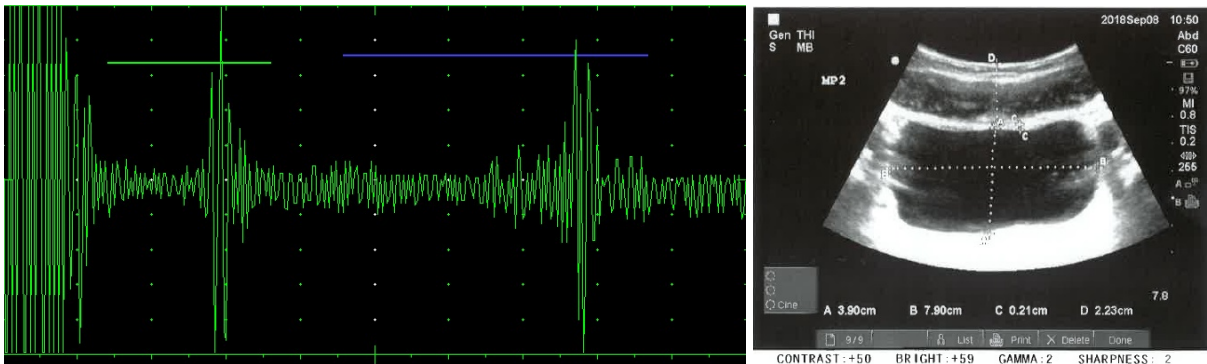


Fig. 9: Volunteer MP2.

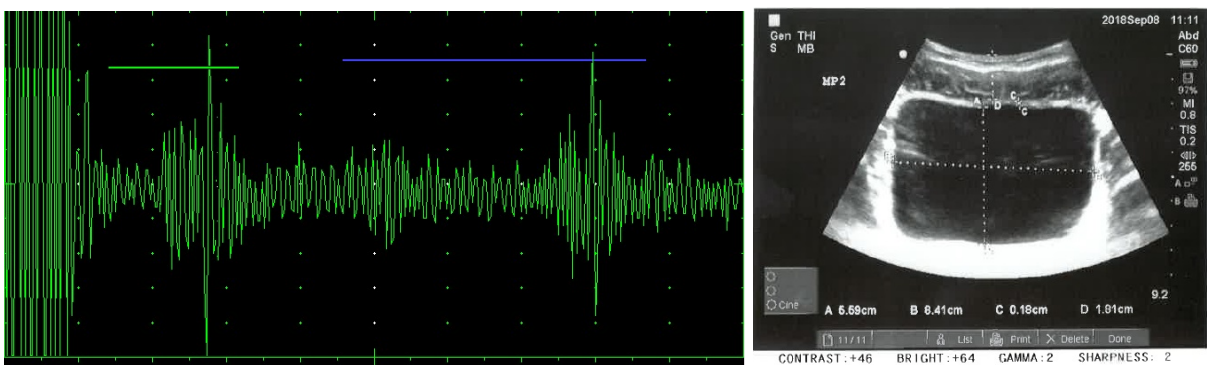


Fig. 10: Volunteer MP2.

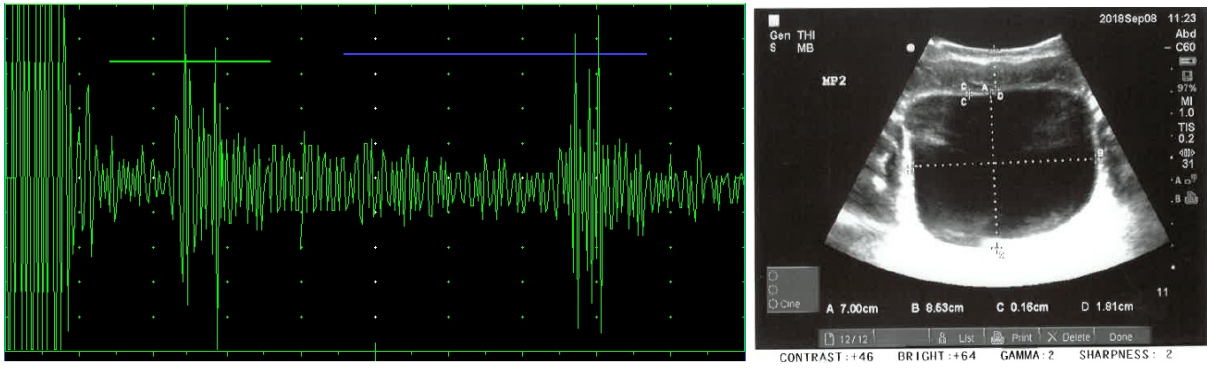


Fig. 11: Volunteer MP2.

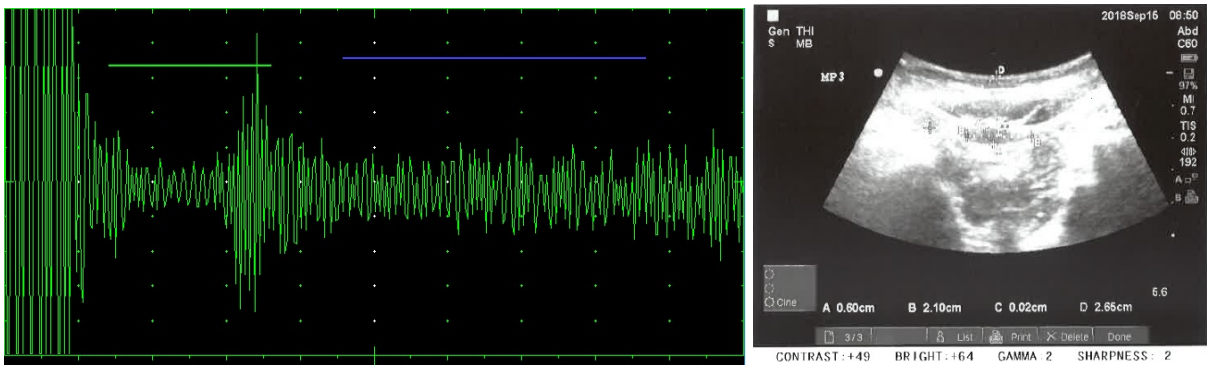


Fig. 12: Volunteer MP3.

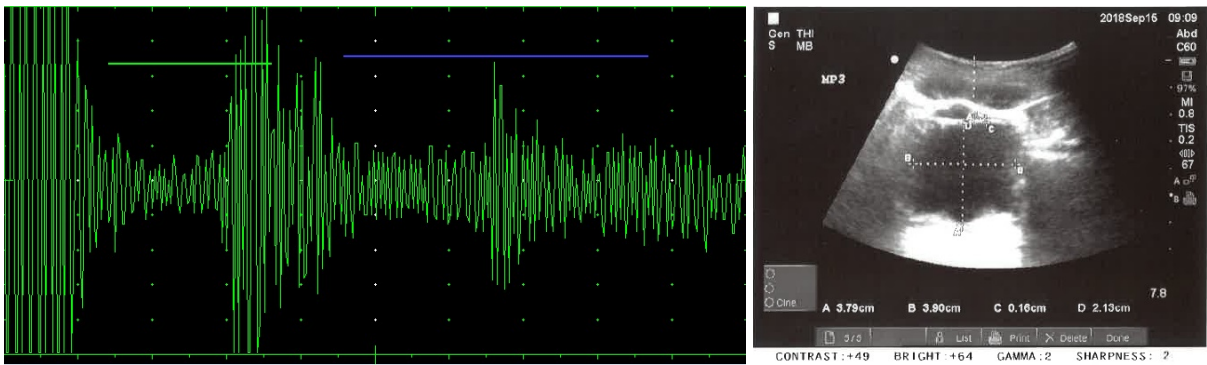


Fig. 13: Volunteer MP3.

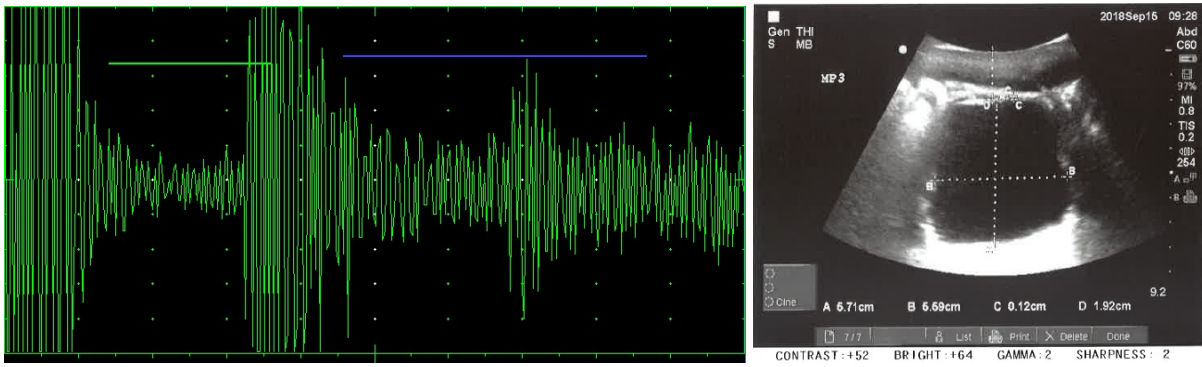


Fig. 14: Volunteer MP3.

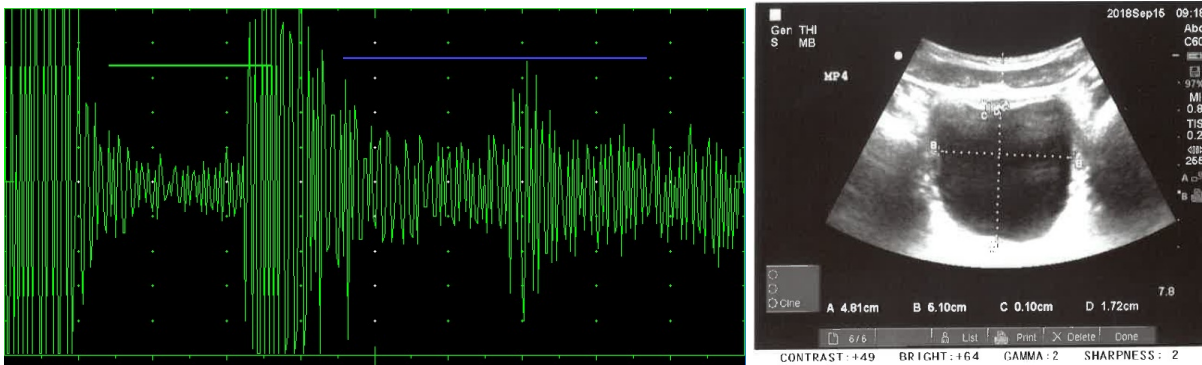


Fig. 15: Volunteer MP3.

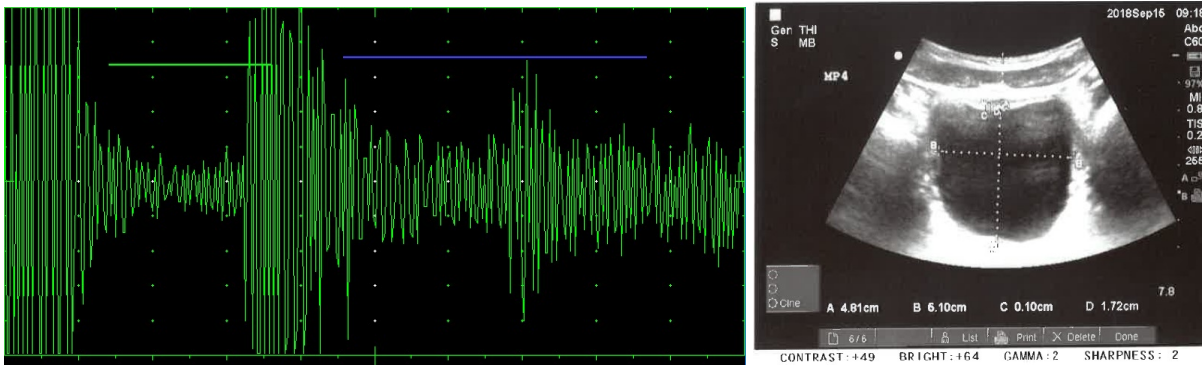


Fig. 16: MP4 second trial.

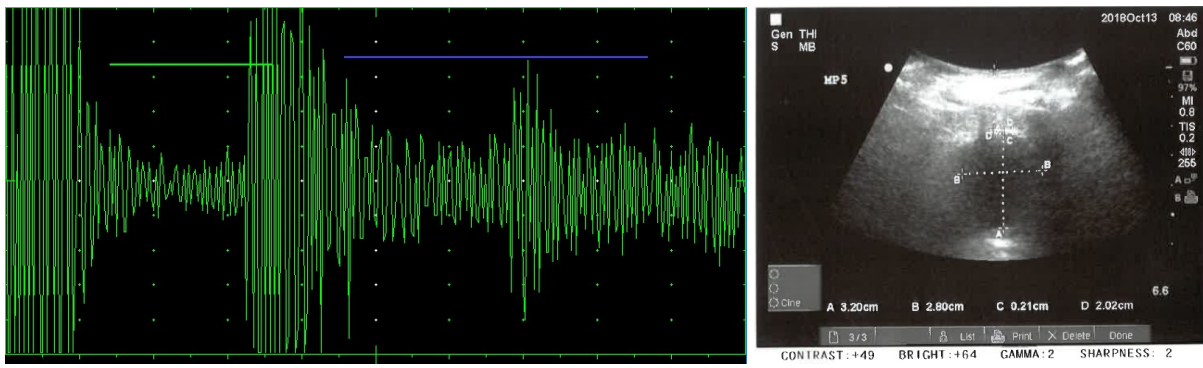


Fig. 17: MP5 first trial.

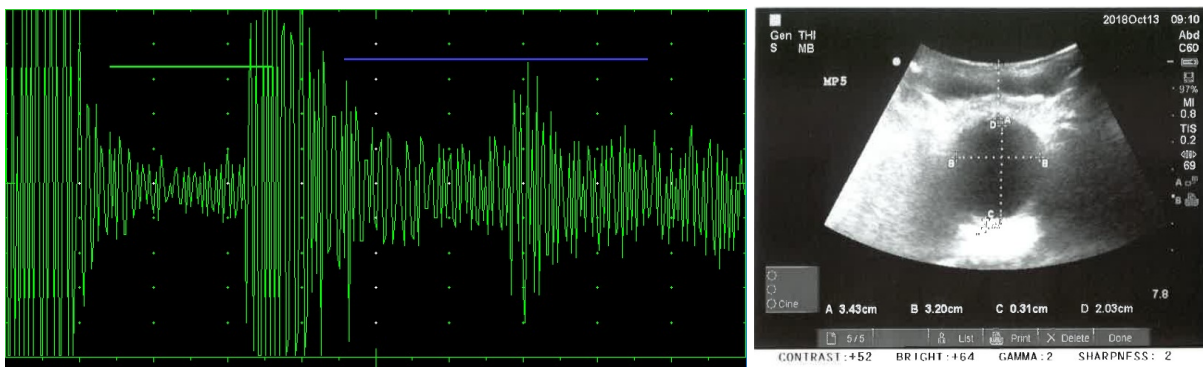


Fig. 18: MP5 second trial.

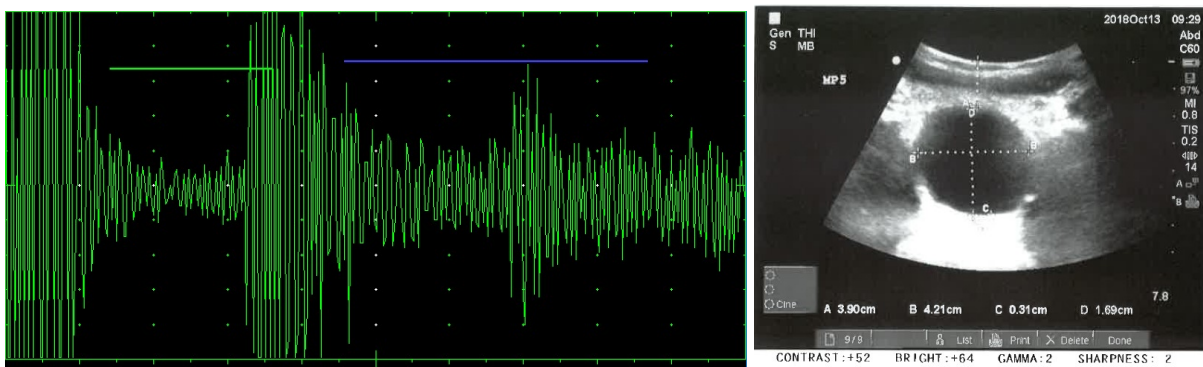


Fig. 19: MP5 third trial.

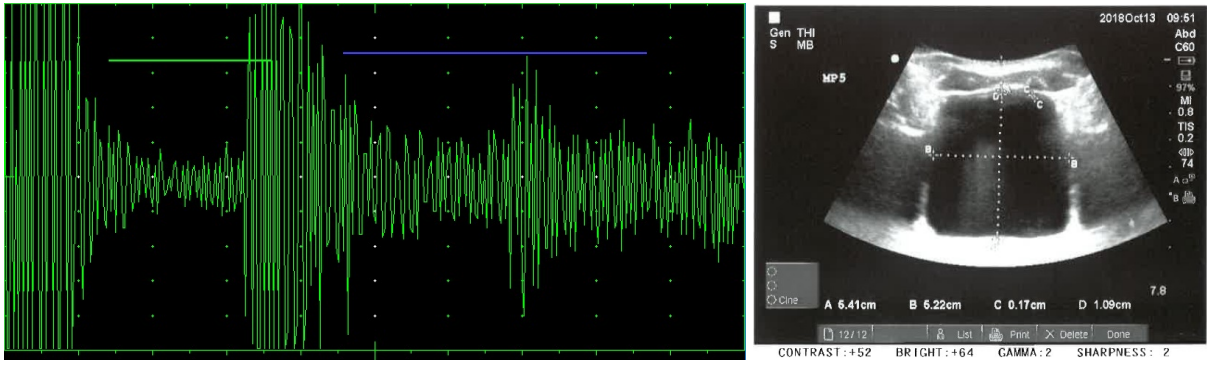


Fig. 20: MP5 fourth trial.

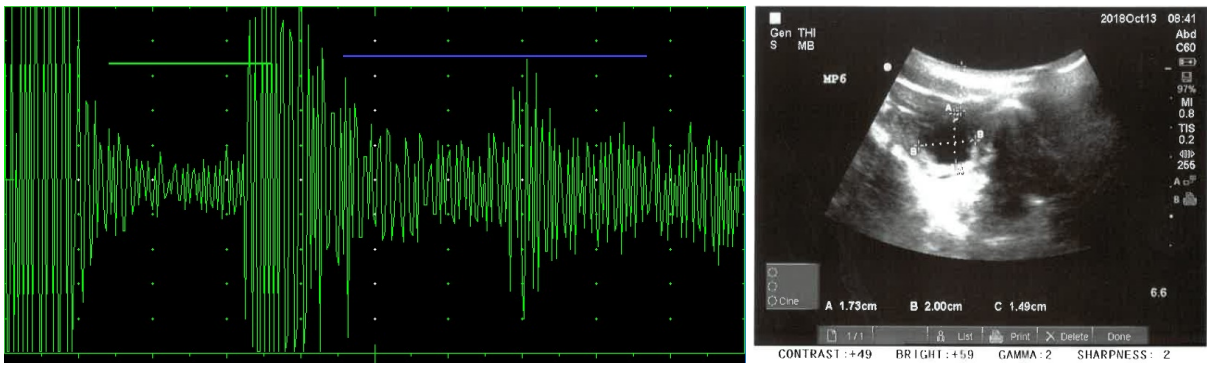


Fig. 21: MP5 first trial.

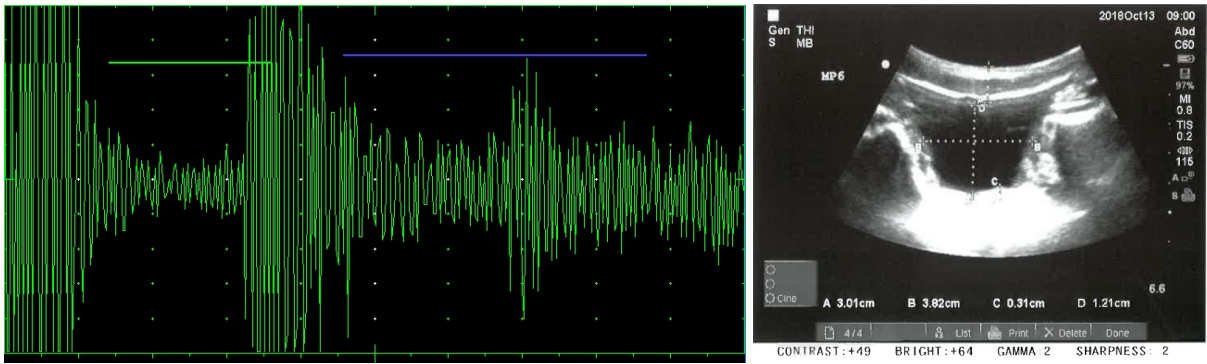


Fig. 22: MP5 second trial.

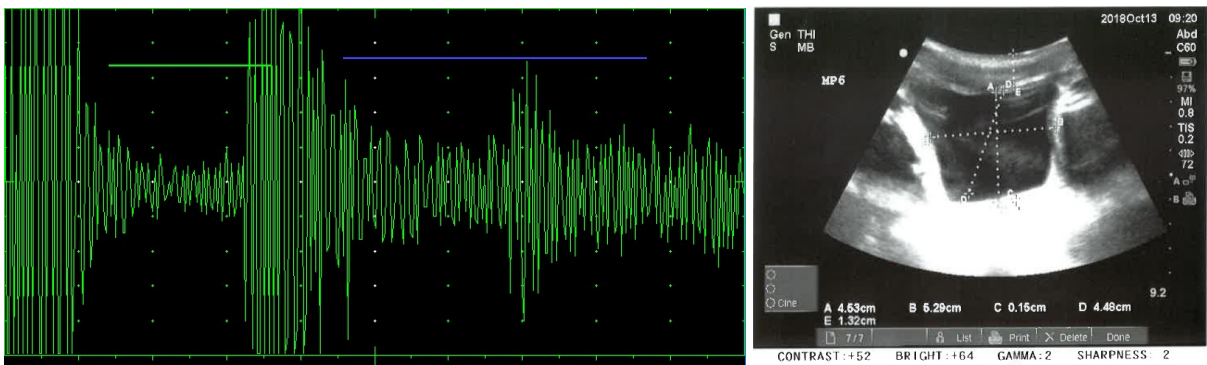


Fig. 23: MP5 third trial.



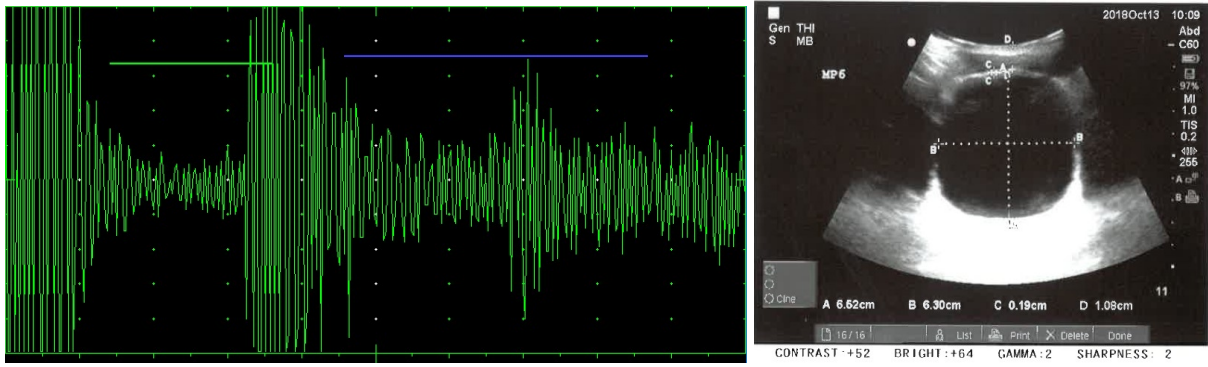


Fig. 24: MP5 fourth trial.

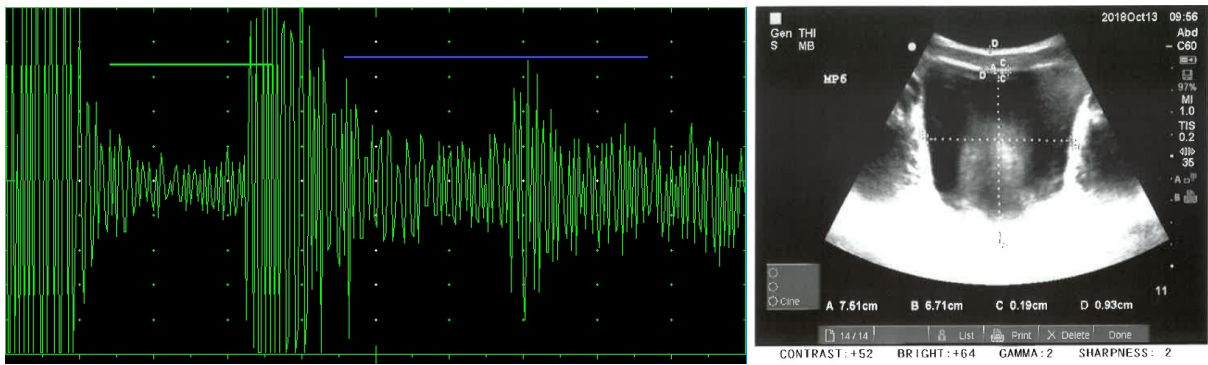


Fig. 25: MP5 fifth trial.

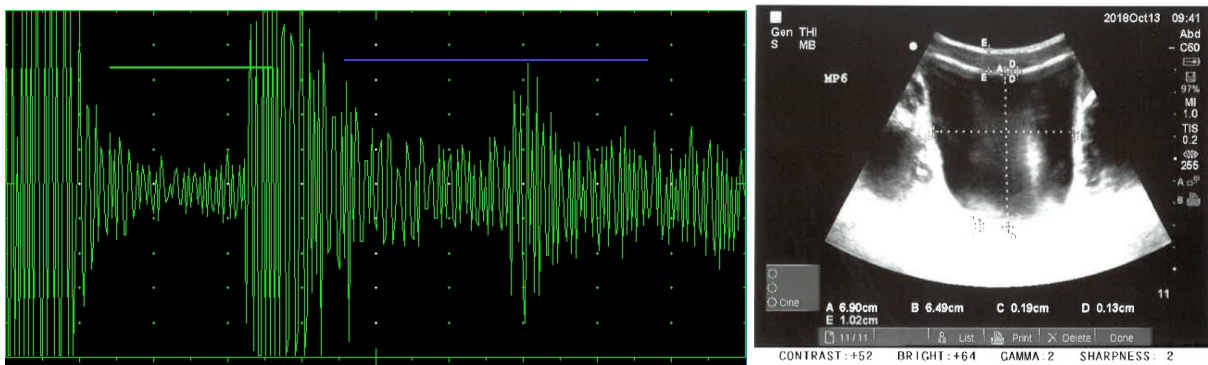


Fig. 26: MP5 sixth trial.

## Initial Experience/Evaluation/Comfort

### 1. Initial fitting instructions: Information sheet

## How to wear your MyPad:

1. Put on your special MyPad underwear



2. Put MyPad into the special pocket on the front of the underwear. Make sure the buttons on MyPad are facing away from your tummy



3. Take the gel pad out of its packet

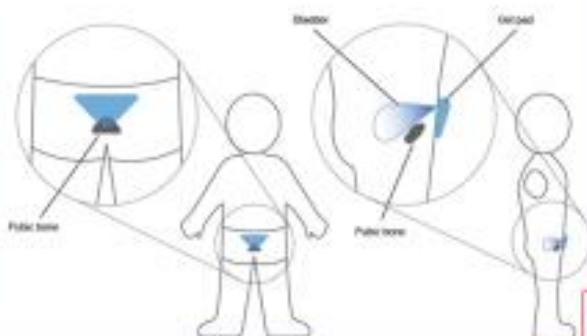


4. Stick the gel pad onto the back of MyPad (the bit that is closest to your tummy)



5. Gently press MyPad against your tummy until it sticks to your tummy

This is where MyPad should stick to your tummy:



This is how to make MyPad work:

- MyPad (INSERT SYMBOLS)

The special underwear will help MyPad to stay in the right place on your tummy



## 2. Comfort/fit test protocol

- Walk 15m (any problems?) Yes/No
- Sit with legs open. (any problems?) Yes/No
- Sit with legs crossed (any problems?) Yes/No
- Lie on your right side. (any problems?) Yes/No
- Lie on your left side. (any problems?) Yes/No
- Lay on your front. (any problems?) Yes/No
- Lay on your back. (any problems?) Yes/No

IF you said YES to any of the questions above,  
please tell us what problems you had:

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**What do you like about the MyPAD?**

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**What do you NOT like about the MyPAD?**

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**3. MyPAD Rating Scale** (to be completed at the initial comfort/fit trial and following the overnight trial by the child – with the help of the carer).






The device makes me feel.....	     
I like the look of it	     
I am conscious/aware of it on my body	     
I can relax when I'm wearing it	     
I worry about using it/wearing it	     
<b>Is the device:</b>	
Annoying/irritating to wear?	     
Cool/fashionable to wear?	     
Embarrassing to wear?	     
Restricting your movement?	     

Hidden enough for you?	
<b>Does the device:</b>	
Feel loose?	
Pull on your clothes?	
Squash your tummy?	
Feel heavy on your tummy?	
Move differently to your body?	
Buzz/tickle?	
Leave bruises/marks?	
Make your tummy feel damp/clammy?	
Dig into your tummy?	
Cause you pain?	

Feel tight?	
Make your tummy tingle?	
Affect your balance?	
Feel as though it might fall off?	
Has the device made moving about difficult?	
Is wearing the device difficult?	
Does your brain have to work hard when you wear the device?	
Does the device stay on your tummy where it is supposed to?	
<b>Does wearing the device:</b>	
Stop you from moving properly?	
Stop you from doing activities?	
Affect your posture?	



2 Questionnaires for the comfort trials

Get in the way?	
Make your muscles tired?	
Make you bump into things?	
Make you move more or less?	
<b>Do you worry:</b>	
About damaging the device?	
That the device might be dangerous?	
About the device working properly?	