

Reduction of Urinary Stone in Children from North-Eastern Thailand†

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Abstract

Bladder stones in children have decreased now compared with the previous decade. If we promote good nutrition for children, bladder stones will decrease and might be eradicated in the future.

A seminar of doctors and health personnel from 19 hospitals in the north-eastern provinces of Thailand was conducted to survey bladder stones in children by weighing and interviewing bladder stone symptoms then giving supplementary diet milk and vitamins and teaching health education about nutrition and urinary stones through referring children with bladder stones to hospitals in north-eastern Thailand for surgery.

The findings of the stone patients from October 1995 to June 1996 from hospitals in northern Thailand were : Total number of patients was 6671 of which 287 patients (4.3%) were 10 years old or younger. Of these children there were 135 renal stone operations (2.0%), 29 ureteric stone operations (0.4%), 106 bladder stone operations (1.6%) and 17 urethral stone operations (0.3%). There were 6384 patients aged more than 10 years. (95.7%) The total number of operations was 5373.

Key word : Urinary Stone, Reduction, Children, North-Eastern Thailand

Urinary stones is one of fifteen non communicable diseases in north-eastern Thailand⁽¹⁾. Bladder stones in children was also a health problem in the previous decade, but now we have campaigns for good nutrition in children, so bladder stones have decreased as reported by Buriram

Hospital in 1983, when there were 79 bladder stone operations in patients up to ten years old (24.4% of all urinary stone operations)⁽²⁾, and from October 1988 to September 1995 there were only 32 bladder stone operations in patients up to ten years old⁽³⁾.

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MATERIAL AND METHOD

At the seminar, doctors and health personnel from 19 hospitals of north-eastern provinces surveyed bladder stones in children by weighing and recording bladder stone symptoms such as dysuria, haematuria, passed stone then giving supplementary diet milk and vitamins for first and second degree malnutrition and teaching health education about

nutrition and urinary stones through referring children with bladder stone symptoms to hospitals in north-eastern Thailand for Urinary analysis and X-rays Plain KUB. If a bladder stone was found then surgery for removal was done.

Findings of patients who had stones removed from October 1995 to June 1996 from the 19 hospitals in north-eastern Thailand were reviewed.

RESULT

The findings of patients with stones in the hospitals of north-eastern Thailand from October 1995 to June 1996 were as follows: The total number of patients was 6,671. There were 287 patients who were 10 years old or younger (4.3%). Renal stone operations were performed 135 times (2.0%), 29 ureteric stone operations (0.4%), 106 bladder stone operations (1.6%), 17 urethral stone operations (0.3%). There were 6,384 patients older than 10 years (95.7%). The total number of operations was 5,373, which is less than the total number of patients because some patients were not operated on. The details of the operations are :

Table 1. Type of operation.

| Type of operation | Numbers | % |
|--------------------------------|---------|-------|
| Open stone surgery | 2,772 | 51.6 |
| Nephrectomy | 452 | 8.4 |
| Ureteric stone basket removed | 24 | 0.4 |
| Cystolitholapaxy | 568 | 10.6 |
| ESWL | 1,467 | 27.3 |
| Percutaneous nephrolithotripsy | 1 | 0.0 |
| Ureteroscopy | 89 | 1.7 |
| Total | 5,373 | 100.0 |

Table 2. Location of stones and age group of 6,671 patients in the hospitals of North-eastern Thailand from October 1995 to June 1996.

| Location of stone | Age : ≤10 yrs | | Age : >10 yrs | | Total | % |
|-------------------|---------------|-----|---------------|------|-------|-------|
| | | % | | % | | |
| Renal stone | 135 | 2.0 | 4,150 | 62.2 | 4,285 | 64.2 |
| Ureteric stone | 29 | 0.4 | 1,017 | 15.3 | 1,046 | 15.7 |
| Bladder stone | 106 | 1.6 | 1,015 | 15.2 | 1,121 | 16.8 |
| Urethral stone | 17 | 0.3 | 202 | 3.0 | 219 | 3.3 |
| Total | 287 | 4.3 | 6,384 | 95.7 | 6,671 | 100.0 |

| | |
|---|---------------|
| -Open stone surgery | 2,772 (51.6%) |
| -Nephrectomy | 452 (8.4%) |
| -Ureteric stone basket removed | 24 (0.4%) |
| -Cystolitholapaxy | 568 (10.6%) |
| -Extracorporeal shock wave lithotripsy (ESWL) | 1,467 (27.3%) |
| -Percutaneous nephrolithotripsy (PCNL) | 1 (0.0%) |
| -Ureteroscopy (URS) | 89 (1.7%) |

The details of ESWL which were done in four regional hospitals are :

| | |
|----------------------------|-------------|
| Nakhon Ratchasima Hospital | 275 (18.7%) |
| Khon Kaen Hospital | 797 (54.5%) |
| Udon Thani Hospital | 144 (9.8%) |
| Sappasithiprasong Hospital | 249 (17.0%) |

Most ESWL was done in Khonken Hospital.

Table 3. Location of stones and operations of patients in the hospitals of North-eastern Thailand from October 1995 to June 1996.

| Location | Open stone surgery | Nephrectomy | Ureteric stone basket removed | Cystolitholapaxy | ESWL | PCNL | URS | Total |
|----------------|--------------------|-------------|-------------------------------|------------------|-------|------|-----|-------|
| Renal stone | 1,672 | 418 | - | - | 1,440 | - | - | 3,530 |
| Ureteric stone | 711 | 34 | 6 | - | 27 | 1 | 89 | 868 |
| Bladder stone | 302 | - | - | 498 | - | - | - | 800 |
| Urethral stone | 87 | - | 18 | 70 | - | - | - | 175 |
| Total | 2,772 | 452 | 24 | 568 | 1,467 | 1 | 89 | 5,373 |
| % | 51.6 | 8.4 | 0.4 | 10.6 | 27.3 | 0.0 | 1.7 | 100 |

Table 4. ESWL in the 4 regional hospitals.

| Hospital | Number of ESWL | Per cent of ESWL |
|-------------------|----------------|------------------|
| Nakhon Ratchasima | 275 | 18.7 |
| Khon Kaen | 797 | 54.5 |
| Udon Thani | 144 | 9.8 |
| Sappasithiprasong | 249 | 17.0 |
| Total | 1467 | 100 |

DISCUSSION

Urinary stones is a health problem in north-eastern Thailand and we ought to campaign for the prevention of hydronephrosis and chronic renal failure from the destruction of stones which end up with nephrectomy. Bladder stones in children have now decreased after good nutrition compared with the previous decade. We could eradicate this problem in the near future by improving the nutrition⁽⁴⁾. Upper tract stones are still a pro-

blem that we have not yet eradicated because of the many factors which induce upper tract stone formation.

Reports of urinary stones from hospitals in North-eastern Thailand from October 1995 to June 1996 showed that a total of 6671 patients consisting of 287 patients (4.3%) aged up to ten years old (Table 2) and of these children 106 had bladder stones (1.6%) (Table 2). So if we campaign to weigh all children and ask for urinary symptoms in mal-nourished children, we will detect bladder stones by sending them to the hospital for U.A. and Plane KUB. Then we will remove the stones if the tests are positive for bladder stones. By using this strategy we could eradicate bladder stones in children in the near future.

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โครงการอีสานปลอดโรคนิ่วทางเดินปัสสาวะในเด็ก†

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จัดประชุมสัมมนาแพทย์และบุคลากรสาธารณสุข จาก 19 จังหวัดในภาคอีสาน ให้ไปอบรมสม. เพื่อค้นหาเด็กแรกเกิดถึง 10 ปี ที่ขาดสารอาหารและเป็นโรคนิ่วกระเพาะปัสสาวะโดยการชั่งน้ำหนัก สอบถามอาการโรคนิ่วกระเพาะปัสสาวะ และให้การรักษาโดยให้อาหารเสริม นม วิตามิน ให้ความรู้เรื่องโภชนาศึกษาและโรคนิ่วทางเดินปัสสาวะแก่ผู้ปกครอง รวมทั้งส่งมาทำการผ่าตัดเด็กที่เป็นโรคนิ่วกระเพาะปัสสาวะในโรงพยาบาลศูนย์ โรงพยาบาลทั่วไป โรงพยาบาลชุมชนของภาคอีสาน

ผลการรวบรวมรายงานโรคนิ่วทางเดินปัสสาวะ ตั้งแต่ตุลาคม 2538 ถึง มิถุนายน 2539 ของโรงพยาบาลบุรีรัมย์ และจาก 18 จังหวัดในภาคอีสาน ที่ส่งมากลุ่มงานเวชกรรมสังคมจังหวัดบุรีรัมย์ พบว่าผู้ป่วยโรคนิ่วของทุกสถานบริการจำนวน 6,671 คน อายุเท่ากับหรือน้อยกว่า 10 ปี 287 คน (4.3%) ซึ่งได้รับการผ่าตัด นิ่วโต 135 ครั้ง คิดเป็น 2.0% นิ่วท่อไต 29 ครั้ง คิดเป็น 0.4% นิ่วกระเพาะปัสสาวะ 106 ครั้ง คิดเป็น 1.6% นิ่วท่อปัสสาวะ 17 ครั้ง คิดเป็น 0.3% อายุมากกว่า 10 ปี 6,384 คน (95.7%) การผ่าตัดนิ่วรวมทั้งหมด จำนวน 5,373 ครั้ง

คำสำคัญ : นิ่วทางเดินปัสสาวะ, ปลอดโรค, เด็ก, ภาคอีสาน

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