

Bilateral Pneumothorax Following Percutaneous Renal Biopsy

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Percutaneous renal biopsy is an important tool for defining the type and severity of many renal diseases. Modifications in the procedure have been made from time to time. The latest innovation has focused on more accurate localization of the kidney by ultrasound localization prior to biopsy. From a large series published in the literature it appears that renal biopsy is almost without risk. However, inspite of 40 years of experience with the highly successful procedure, complications of renal biopsy continue to occur(1). We report an unusual complication following renal biopsy.

Case Report

This 3-year-old girl with steroid resistant nephrotic syndrome, was admitted for percutaneous renal biopsy after appropriate preparation and ultrasonographic localization of biopsy site. The procedure was performed on left side with a Trucut needle under ketamine sedation. The procedure was

completed uneventfully. Twelve hours later she developed respiratory distress. Physical examination was consistent with diagnosis of bilateral pneumothorax and this was confirmed on X-ray chest. Appropriate drainage was done by putting in chest tube and antibiotics were given empirically. Subsequently chest tube was removed on 4th post biopsy day. She remained afebrile upto 5th post biopsy day but continuous fever (maximum temperature 38.5°C) was noted from 6th post biopsy day. Examination revealed a left renal mass. The complete septic workup was performed which was negative. Ultrasonography examination suggested laceration of upper pole of left kidney with hematoma. At this time her blood pressure also showed a rise to 160/110 mm of Hg. She was treated with captopril, nifedipine, hydrochlorthiazide and propranolol. The upper pole hematoma was managed conservatively and she became afebrile on 10th post biopsy day. She showed gradual improvement and at 6 weeks follow up, the hematoma had almost disappeared but she still required drugs for management of hypertension. Renal biopsy showed focal segmental glomerulosclerosis.

Discussion

Percutaneous renal biopsies are being carried out with increasing frequency in children. This is because of the high degree of success with relatively few complications. Usually, it is done through the lower pole of the kidney(2). However, complications following the procedure are not infrequent inspite of all precautions(3-5). Even ultrasound localization while greatly increasing the likelihood of procuring renal tissue for

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microscopic evaluation, has not significantly decreased the incidence of complications following kidney biopsy(4). Hematuria is the most common complication of percutaneous renal biopsy(2). Microscopic hematuria is said to occur in virtually all patients, but gross hematuria has been reported in 2-50% of children biopsied. Significant perinephric hematoma can occur in 0.54-2.9% patients(3-5). Mortality following kidney biopsy is rare but well described. Slotkin and Madsen(3) and Diaz-Buxo and Donadio(4) have reported an overall mortality of only 0.1% in 5000 and 1000 biopsies, respectively.

Pneumothorax following a renal biopsy is uncommon. Slotkin and Madsen found only 9 cases of unilateral pneumothorax in a review of over 5000 cases who had undergone renal, biopsy(3). There is no report of bilateral pneumothorax developing following kidney biopsy. Why our patient developed bilateral pneumothorax is still unclear but the hypothesis is that air can traverse to opposite side through medi-

astinum in presence of subcutaneous emphysema (which was present in our case) or in presence of mediastinal emphysema, which we could not demonstrate on X-rays. There is increased risk of pneumothorax in young children(4). This may be related to inadequate immobilization of a young child.

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Congenital Complete Heart Block

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Gerbezius in 1718 was the first physician to report the slow pulse of atrio-

ventricular block(1). Morgeni in 1791, published a description of a patient with slow pulse and seizure. However, it was not until 1901 that Merquio described

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