Background: Primary ciliary dyskinesia (PCD) is a genetic disorder causing dysfunctional motility of cilia with a wide clinical spectrum. Aim: To investigate dynein arm (DA) and microtubule defects quantitatively in patients with PCD. Patients and methods: Retrospective review of clinical chart of thirty-three patients (aged 1 to 21 years; 14 females) with recurrent upper and/or lower respiratory tract infections were included. Nasal/bronchial mucosal biopsy was fixed in glutaraldehyde and routine electron microscopic procedures were carried out. To obtain follow up information, a telephone survey was done. Results: Chronic rhinitis/sinusitis (n=25; 77%), recurrent otitis media (n=19; 57%), recurrent pneumonia (n=18; 56%) and situs inversus (n=10; 30%) were the most clinical features of the disease. All subjects had defects in ciliary structure and involve the inner DA (90%) or outer DA (55%). All patients with inner DA defect had absent in more than 50 percent of the cilia. Middle ear ventilation tubes were placed in 19 patients and 12/19 remained without othorrea. Sixteen patients (48%) with recurrent episodes of rhino sinusitis required adenoidectomy. Seven (21%) required a functional endoscopic sinus surgery (FESS) and 6 improved after FESS. Conclusions: In our patient recurrent airway infections was a frequent clinical features. Absent of inner DA was found in high percentage of cilia. FESS and use of ventilation tubes may have a beneficial role in a subgroup of patients with PCD.