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Normal contrast enhancement pattern of the uterus and cervix at multidetector CT

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PURPOSE: To analyze and classify the normal enhancement patterns of the uterus and cervix at multidetector (MD) CT.
MATERIALS AND METHODS: 325 pelvic MDCTs performed in women without any definite gynecologic diseases at our hospital during recent 2 years are included in our study. The contrast enhancement patterns of the well-scanned normal uterus & uterine cervix at MDCT were analyzed and classified.
RESULTS: Four patterns of uterine contrast enhancement were found: type 1, thick or thin subendometrial bandlike enhancement with or without outer myometrial enhancement; type 2, enhancement progressing from the outer myometrial region to the entire myometrium or diffuse from the onset, without any defined subendometrial enhancement; type 3, faint diffuse myometrial enhancement; type 4, patchy heterogeneous enhancement throughout the myometrium. Type 1 was found predominantly in premenopausal women, type 3 exclusively in postmenopausal women, and type 2 equally in pre- and postmenopausal women. The uterine cervix on post-contrast CT showed a target appearance on axial images (enhancement degree: inner fibromuscular stroma < outer fibromuscular stroma < central mucosa), especially in patients with a type I or type 2 uterine enhancement pattern.
CONCLUSION: Radiologists may benefit by developing a greater familiarity with the normal uterine and cervical enhancement patterns that are commonly seen on MDCT images, and by developing ability to differentiate between normal and abnormal MDCT findings and to avoid potential MDCT pitfalls.