

Evaluation of relationship between Infrarenal Aortic diameter and Aortic bifurcation level with Disc Degeneration by MRI

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Background

Lumbar disc degenerative disease (LDDD) is a very common problem all over the world. Although this condition is very frequent, exact etiologies are still under investigation. Some authors have suggested that atherosclerotic changes in the abdominal aorta may be connected with LDDD. The available data, however, are insufficient and inconclusive. It has been shown that abdominal aortic dilation and abdominal aortic bifurcation descent may represent atherosclerotic changes in this segment of the aorta. This study aims to evaluate a relationship between infrarenal Aortic diameter and Aortic bifurcation level with LDDD by magnetic resonance (MR) imaging.

Methods & Materials

Lumbar MR images of 496 patients with low back pain were reviewed. Accordingly, patients were categorized in two groups, including the cases with degenerative changes in the lumbar intervertebral discs (n=304) and the controls without LDDD (n=192). Infrarenal aortic diameter and abdominal aortic bifurcation position were reported in each subject from MR images.

Results

There were 157 males and 147 females in the case group, and 98 males and 94 females in the control group (p=0.90). Patients in the case group were significantly older than the controls (median age, 54 years vs. 43 years, p<0.001). The median infrarenal aortic diameter was significantly higher in the case than in the control group (19 mm vs. 17 mm, p<0.001). The level of the abdominal aortic bifurcation was significantly lower in the case than in the control group (p<0.001). The differences between the two groups were independent of the patients' age.

Conclusion

Both infrarenal aortic dilation and caudal displacement of the abdominal aortic bifurcation are connected with an increased risk of LDDD, independent of age and sex of the patients. To reach a solid conclusion in this regard, however, longitudinal studies are required.

Keywords: *Infrarenal Aortic Dilation; Abdominal Aortic Bifurcation; Lumbar Disc Degenerative disease.*